

July 19, 2001

Mr. J. Gordon Hurst  
Southern Indiana Gas and Electric Company  
P. O. Box 3606  
Evansville, Indiana 47735-3606

Re: 163-14083-00001  
Significant Permit Modification to:  
Part 70 permit No.: T163-6899-00001

Dear Mr. Hurst:

Southern Indiana Gas and Electric Company (SIGECO) was issued Part 70 operating permit T163-6899-00001 on February 10, 1999, for a stationary electric utility peaking station consisting of two (2) natural gas-fired turbines identified as Unit # 1 and Unit # 2. A letter requesting changes to this permit was received on June 16, 2000. Pursuant to the provisions of 326 IAC 2-7-12 a significant permit modification to this permit is hereby approved as described in the attached Technical Support Document.

The permit modification consists of:

1. Changes in the annual fuel limits for Units 1 and 2;
2. Addition of NO<sub>x</sub> emission limits for Units 1 and 2;
3. Removal of the Particulate Matter Limit Compliance Schedule for Unit 1;
4. Correction of the SO<sub>2</sub> limits for Unit 2;
5. Descriptive changes for Unit 2;
  - (a) Notation that the heat input capacity is based on the lower heating value;
  - (b) Addition of an inlet fogging system for optional power production enhancement;
6. Additional fuel usage limits for Unit 2 when the inlet fogging is in use;
7. Addition of stack testing requirements for Units 1 and 2, and
8. Corresponding revisions to record keeping and reporting requirements.

All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Vickie Cordell, OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call at (800) 451-6027, press 0 and ask for Vickie Cordell or extension 3-1782, or dial (317) 233-1782.

Sincerely,

Original Signed by Paul Dubenetzky  
Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality

Attachments

vkC

cc: File - Vanderburgh County  
U.S. EPA, Region V  
Vanderburgh County Health Department  
Evansville EPA  
Southwest Regional Office  
Air Compliance Section Inspector - Scott Anslinger  
Compliance Data Section - Karen Nowak  
Administrative and Development - Janet Mobley  
Technical Support and Modeling - Michele Boner

**PART 70 OPERATING PERMIT  
and ENHANCED NEW SOURCE REVIEW  
OFFICE OF AIR QUALITY  
and CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**Southern Indiana Gas and Electric Company  
Broadway Avenue Generating Station  
2600 Broadway Avenue  
Evansville, Indiana 47712**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T163-6899-00001	
Original issued by Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: February 10, 1999  Expiration Date: February 10, 2004
Significant Source Modification 163-12400-00001	Issuance Date:
First Permit Modification 163-14083-00001	Pages Affected: 3 - 5, 28 - 35, 39 - 44
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: July 19, 2001

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**Quarterly Compliance Monitoring Report**

## SECTION A

## SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) and City of Evansville EPA. The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

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The Permittee owns and operates a stationary electric utility peaking station.

Responsible Official: Ron Jochum  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
SIC Code: 4911  
County Location: Vanderburgh  
County Status: Attainment for all criteria pollutants  
Source Status: Part 70 Permit Program  
Major Source, under PSD rules

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

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This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) natural gas-fired turbine, identified as Unit #1, with a heat input capacity of 770 million BTU per hour, and exhausting to stack #1.
- (b) One (1) natural gas-fired turbine, identified as Unit #2, with a heat input capacity of 900 million BTU per hour (lower heating value (LHV) at 60EF), utilizing water injection for NO<sub>x</sub> emissions reduction, and exhausting to stack #2. Fuel oils no.1 and no. 2 will be used as alternative fuels. An inlet fogging system may be used to enhance power production.

### A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

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This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1(21) that have applicable requirements.

### A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

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This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

## SECTION B

## GENERAL CONDITIONS

### B.1 Permit No Defense [326 IAC 2-1-10] [IC 13]

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- (a) Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7.
- (b) This prohibition shall not apply to alleged violations of applicable requirements for which the Commissioner has granted a permit shield in accordance with 326 IAC 2-1-3.2 or 326 IAC 2-7-15, as set out in this permit in the Section B condition entitled "Permit Shield."

### B.2 Definitions [326 IAC 2-7-1]

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Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2 and 326 IAC 2-7 shall prevail.

### B.3 Permit Term [326 IAC 2-7-5(2)]

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This permit is issued for a fixed term of five (5) years from the effective date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3.

### B.4 Enforceability [326 IAC 2-7-7(a)]

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- (a) All terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM and City of Evansville EPA.
- (b) Unless otherwise stated, terms and conditions of this permit, including any provisions to limit the source's potential to emit, are enforceable by the United States Environmental Protection Agency (U.S. EPA) and citizens under the Clean Air Act.
- (c) All terms and conditions in this permit that are local requirements, including any provisions designed to limit the source's potential to emit, are enforceable by City of Evansville EPA.

### B.5 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]

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The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

### B.6 Severability [326 IAC 2-7-5(5)]

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The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

### B.7 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

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This permit does not convey any property rights of any sort, or any exclusive privilege.

### B.8 Duty to Supplement and Provide Information [326 IAC 2-7-4(b)] [326 IAC 2-7-5(6)(E)]

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- (a) The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015



and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

- (b) The Permittee shall furnish to IDEM, OAQ, and City of Evansville EPA within a reasonable time, any information that IDEM, OAQ, and City of Evansville EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.
- (c) Upon request, the Permittee shall also furnish to IDEM, OAQ, and City of Evansville EPA copies of records required to be kept by this permit. If the Permittee wishes to assert a claim of confidentiality over any of the furnished records, the Permittee must furnish such records to IDEM, OAQ, and City of Evansville EPA along with a claim of confidentiality under 326 IAC 17. If requested by IDEM, OAQ, or the U.S. EPA, to furnish copies of requested records directly to U. S. EPA, and if the Permittee is making a claim of confidentiality regarding the furnished records, then the Permittee must furnish such confidential records directly to the U.S. EPA along with a claim of confidentiality under 40 CFR 2, Subpart B.

B.9 Compliance with Permit Conditions [326 IAC 2-7-5(6)(A)] [326 IAC 2-7-5(6)(B)]

- (a) The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit constitutes a violation of the Clean Air Act and is grounds for:
  - (1) Enforcement action;
  - (2) Permit termination, revocation and reissuance, or modification; or
  - (3) Denial of a permit renewal application.
- (b) It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B.10 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)]

- (a) Any application form, report, or compliance certification submitted under this permit shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, and any other certification required under this permit, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, on the attached Certification Form, with each submittal.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

B.11 Annual Compliance Certification [326 IAC 2-7-6(5)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The certification shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than April 15 of each year to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

and

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and City of Evansville EPA on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
  - (1) The identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;
  - (3) Whether compliance was based on continuous or intermittent data;
  - (4) The methods used for determining compliance of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3);
  - (5) Any insignificant activity that has been added without a permit revision; and
  - (6) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ, and City of Evansville EPA may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

B.12 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)]  
[326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this permit, including the following information on each facility:
  - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

- (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that lack of proper maintenance does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, OAQ, and City of Evansville EPA upon request and shall be subject to review and approval by IDEM, OAQ, and City of Evansville EPA.

**B.13 Emergency Provisions [326 IAC 2-7-16]**

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- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation, except as provided in 326 IAC 2-7-16.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and City of Evansville EPA within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

IDEM Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or  
IDEM Telephone Number: 317-233-5674 (ask for Compliance Section)  
IDEM Facsimile Number: 317-233-5967  
Evansville EPA Telephone Number: 812-426-5597  
Evansville EPA Facsimile Number: 812-426-5399

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted notice, either in writing or facsimile, of the emergency to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
  - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions) for sources subject to this rule after the effective date of this rule. This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
  - (e) IDEM, OAQ, and City of Evansville EPA may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(9) be revised in response to an emergency.
  - (f) Failure to notify IDEM, OAQ, and City of Evansville EPA by telephone or facsimile of an emergency lasting more than one (1) hour in compliance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
  - (g) Operations may continue during an emergency only if the following conditions are met:
    - (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
    - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

- (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
- (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value.

Any operation shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

**B.14 Permit Shield [326 IAC 2-7-15]**

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- (a) This condition provides a permit shield as addressed in 326 IAC 2-7-15.
- (b) This permit shall be used as the primary document for determining compliance with applicable requirements established by previously issued permits. Compliance with the conditions of this permit shall be deemed in compliance with any applicable requirements as of the date of permit issuance, provided that:
  - (1) The applicable requirements are included and specifically identified in this permit; or
  - (2) The permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable.
- (c) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, including any term or condition from a previously issued construction or operation permit, IDEM, OAQ, and City of Evansville EPA shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.
- (d) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application.
- (e) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:
  - (1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;
  - (2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;
  - (3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and
  - (4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.
- (f) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

- (g) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, and City of Evansville EPA has issued the modifications. [326 IAC 2-7-12(c)(7)]
- (h) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, and City of Evansville EPA has issued the modification. [326 IAC 2-7-12(b)(8)]

**B.15 Multiple Exceedances [326 IAC 2-7-5(1)(E)]**

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Any exceedance of a permit limitation or condition contained in this permit, which occurs contemporaneously with an exceedance of an associated surrogate or operating parameter established to detect or assure compliance with that limit or condition, both arising out of the same act or occurrence, shall constitute a single potential violation of this permit.

**B.16 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]**

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- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

within ten (10) calendar days from the date of the discovery of the deviation.

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
  - (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
  - (2) An emergency as defined in 326 IAC 2-7-1(12); or
  - (3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.
  - (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred is a deviation.
- (c) Written notification shall be submitted on the attached Emergency/Deviation Occurrence Reporting Form or its substantial equivalent. The notification does not need to be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) Proper notice submittal under 326 IAC 2-7-16 satisfies the requirement of this subsection.

B.17 Permit Modification, Reopening, Revocation and Reissuance, or Termination  
[326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]

---

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)]
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ, and City of Evansville EPA determines any of the following:
  - (1) That this permit contains a material mistake.
  - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
  - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]
- (c) Proceedings by IDEM, OAQ, and City of Evansville EPA to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ, and City of Evansville EPA at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ, and City of Evansville EPA may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.18 Permit Renewal [326 IAC 2-7-4]

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- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ, and City of Evansville EPA and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

- (b) Timely Submittal of Permit Renewal [326 IAC 2-7-4(a)(1)(D)]
  - (1) A timely renewal application is one that is:
    - (A) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

- (B) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and City of Evansville EPA on or before the date it is due. [326 IAC 2-5-3]
- (2) If IDEM, OAQ, and City of Evansville EPA, upon receiving a timely and complete permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.
- (c) Right to Operate After Application for Renewal [326 IAC 2-7-3]  
If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ, and City of Evansville EPA, takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ, and City of Evansville EPA, any additional information identified as being needed to process the application.
- (d) United States Environmental Protection Agency Authority [326 IAC 2-7-8(e)]  
If IDEM, OAQ, and City of Evansville EPA fails to act in a timely way on a Part 70 permit renewal, the U.S. EPA may invoke its authority under Section 505(e) of the Clean Air Act to terminate or revoke and reissue a Part 70 permit.
- B.19 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]**
- 
- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:
- Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015
- and
- City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708
- Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]
- B.20 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12 (b)(2)]**
- 
- (a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.



- (b) Notwithstanding 326 IAC 2-7-12(b)(1)(D)(i) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

**B.21 Changes Under Section 502(b)(10) of the Clean Air Act [326 IAC 2-7-20(b)]**

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The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a) and the following additional conditions:

- (a) For each such change, the required written notification shall include a brief description of the change within the source, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.
- (b) The permit shield, described in 326 IAC 2-7-15, shall not apply to any change made under 326 IAC 2-7-20(b).

**B.22 Operational Flexibility [326 IAC 2-7-20]**

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- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b), (c), or (e), without a prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any approval required by 326 IAC 2-1 has been obtained;
- (3) The changes do not result in emissions which exceed the emissions allowable under this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
- (4) The Permittee notifies the:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

and

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site which document, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-7-20(b), (c), or (e) and makes such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ, and City of Evansville EPA in the notices specified in 326 IAC 2-7-20(b), (c)(1), and (e)(2).

- (b) For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

- (1) A brief description of the change within the source;
- (2) The date on which the change will occur;
- (3) Any change in emissions; and
- (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) Emission Trades [326 IAC 2-7-20(c)]  
The Permittee may trade increases and decreases in emissions in the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).
- (d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

#### B.23 Construction Permit Requirement [326 IAC 2]

Except as allowed by Indiana P.L. 130-1996 Section 12, as amended by P.L. 244-1997, modification, construction, or reconstruction shall be approved as required by and in accordance with 326 IAC 2.

#### B.24 Inspection and Entry [326 IAC 2-7-6(2)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, the Permittee shall allow IDEM, OAQ, and City of Evansville EPA U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.  
[326 IAC 2-7-6(6)]
  - (1) The Permittee may assert a claim that, in the opinion of the Permittee, information removed or about to be removed from the source by IDEM, OAQ, and City of Evansville EPA or an authorized representative, contains information that is confidential under IC 5-14-3-4(a). The claim shall be made in writing before or at the time the information is removed from the source. In the event that a claim of confidentiality is so asserted, neither IDEM, OAQ, and City of Evansville EPA nor an authorized representative, may disclose the information unless and until IDEM, OAQ, and City of Evansville EPA makes a determination under 326 IAC 17-1-7 through 326 IAC 17-1-9 that the information is not entitled to confidential treatment and that determination becomes final. [IC 5-14-3-4; IC 13-14-11-3; 326 IAC 17-1-7 through 326 IAC 17-1-9]
  - (2) The Permittee, IDEM, OAQ, and City of Evansville EPA acknowledge that the federal law applies to claims of confidentiality made by the Permittee with regard to information removed or about to be removed from the source by U.S. EPA. [40 CFR Part 2, Subpart B]

B.25 Transfer of Ownership or Operation [326 IAC 2-1-6] [326 IAC 2-7-11]

Pursuant to 326 IAC 2-1-6 and 326 IAC 2-7-11:

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch and City of Evansville EPA, within thirty (30) days of the change. Notification shall include a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the Permittee and the new owner.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by an administrative amendment pursuant to 326 IAC 2-7-11. The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) IDEM, OAQ, and City of Evansville EPA shall reserve the right to issue a new permit.

B.26 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)]

- (a) The Permittee shall pay annual fees to IDEM, OAQ, and City of Evansville EPA, within thirty (30) calendar days of receipt of a billing. If the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Failure to pay may result in administrative enforcement action, or revocation of this permit.

- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-0425 (ask for OAQ, Technical Support and Modeling Section), to determine the appropriate permit fee.

**B.27 Enhanced New Source Review [326 IAC 2]**

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The requirements of the construction permit rules in 326 IAC 2 are satisfied by this permit for any previously unpermitted facilities and facilities to be constructed within eighteen (18) months after the date of issuance of this permit, as listed in Sections A.2 and A.3.

## SECTION C

## SOURCE OPERATION CONDITIONS

Entire Source
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### Emission Limitations and Standards [326 IAC 2-7-5(1)]

- C.1 **Particulate Matter Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour [326 IAC 6-3-2(c)]**  
Pursuant to 326 IAC 6-3-2(c), the allowable particulate matter emissions rate from any process not already regulated by 326 IAC 6-1 or any New Source Performance Standard, and which has a maximum process weight rate less than 100 pounds per hour shall not exceed 0.551 pounds per hour.
- C.2 **Opacity [326 IAC 5-1]**  
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:
- (a) Opacity shall not exceed an average of thirty percent (30%) any one (1) six (6) minute averaging period, as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute overlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- C.3 **Open Burning [326 IAC 4-1] [IC 13-17-9]**  
The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4, 326 IAC 4-1-6, or MCE 3.30.18.214. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable. MCE 3.30.18.214 is a locally enforceable provision.
- C.4 **Incineration [326 IAC 4-2][326 IAC 9-1-2]**  
The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2, 326 IAC 9-1-2 and MCE 3.30.18.214. MCE 3.30.18.214 is a locally enforceable provision.
- C.5 **Fugitive Dust Emissions [326 IAC 6-4]**  
The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions) or MCE 3.30.18.212. 326 IAC 6-4-2(4) is not federally enforceable. MCE 3.30.18.212 is a locally enforceable provision.
- C.6 **Operation of Equipment [326 IAC 2-7-6(6)]**  
All air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission unit vented to the control equipment is in operation.
- C.7 **Stack Height [326 IAC 1-7]**  
The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

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- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
  - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
  - (2) If there is a change in the following:
    - (A) Asbestos removal or demolition start date;
    - (B) Removal or demolition contractor; or
    - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
Asbestos Section, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (e) Procedures for Asbestos Emission Control  
The Permittee shall comply with the emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 emission control requirements are mandatory for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) Indiana Accredited Asbestos Inspector  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited is federally enforceable.

## Testing Requirements [326 IAC 2-7-6(1)]

### C.9 Performance Testing [326 IAC 3-6]

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- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing methods approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by the Commissioner, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

## Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

### C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

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Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment, no more than ninety (90) days after receipt of this permit. If due to circumstances beyond its control, this schedule cannot be met, the Permittee may extend compliance schedule an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**C.11 Maintenance of Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]**

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- (a) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less than one (1) hour until such time as the continuous monitor is back in operation.
- (b) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

**C.12 Monitoring Methods [326 IAC 3]**

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Any monitoring or testing performed to meet the applicable requirements of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

**Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]**

**C.13 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]**

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Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:  
  
Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015  
  
and  
  
City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708  
  
within ninety (90) days after the date of issuance of this permit.  
  
The ERP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) If the ERP is disapproved by IDEM, OAQ, and City of Evansville EPA, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.



- (f) Upon direct notification by IDEM, OAQ, and City of Evansville EPA, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

**C.14 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68.215]**

If a regulated substance, subject to 40 CFR 68, is present in a process in more than the threshold quantity, 40 CFR 68 is an applicable requirement and the Permittee shall:

- (a) Submit:
- (1) A compliance schedule for meeting the requirements of 40 CFR 68 by the date provided in 40 CFR 68.10(a); or
  - (2) As a part of the compliance certification submitted under 326 IAC 2-7-6(5), a certification statement that the source is in compliance with all the requirements of 40 CFR 68, including the registration and submission of a Risk Management Plan (RMP); and
  - (3) A verification to IDEM, OAQ, and City of Evansville EPA that a RMP or a revised plan was prepared and submitted as required by 40 CFR 68.
- (b) Provide annual certification to IDEM, OAQ, and City of Evansville EPA that the Risk Management Plan is being properly implemented.

All documents submitted pursuant to this condition shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**C.15 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5][326 IAC 2-7-6] [326 IAC 1-6]**

- (a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:
- (1) This condition;
  - (2) The Compliance Determination Requirements in Section D of this permit;
  - (3) The Compliance Monitoring Requirements in Section D of this permit;
  - (4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and
  - (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ, and City of Evansville EPA upon request and shall be subject to review and approval by IDEM, OAQ, and City of Evansville EPA. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of:
    - (A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and

- (B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.
- (b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.
- (c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:
  - (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.
  - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied or;
  - (3) An automatic measurement was taken when the process was not operating; or
  - (4) The process has already returned to operating within "normal" parameters and no response steps are required.
- (d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]  
[326 IAC 2-7-6]

- 
- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAQ shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAQ within thirty (30) days of receipt of the notice of deficiency. IDEM, OAQ reserves the authority to use enforcement activities to resolve noncompliant stack tests.
  - (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected facility.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

**C.17 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)] [326 IAC 2-6]**

- (a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:
- (1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
  - (2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 fee assessment.
- (b) The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:
- Indiana Department of Environmental Management  
Technical Support and Modeling Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015
- and
- City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708
- (c) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and City of Evansville EPA on or before the date it is due.

**C.18 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]**

- (a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM and City of Evansville EPA may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.19 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ, and City of Evansville EPA representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or City of Evansville EPA makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or City of Evansville EPA within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
  - (1) The date, place, and time of sampling or measurements;
  - (2) The dates analyses were performed;
  - (3) The company or entity performing the analyses;
  - (4) The analytic techniques or methods used;
  - (5) The results of such analyses; and
  - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
  - (1) Copies of all reports required by this permit;
  - (2) All original strip chart recordings for continuous monitoring instrumentation;
  - (3) All calibration and maintenance records;
  - (4) Records of preventive maintenance shall be sufficient to demonstrate that improper maintenance did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.20 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) To affirm that the source has met all the compliance monitoring requirements stated in this permit the source shall submit a Quarterly Compliance Monitoring Report. Any deviation from the requirements and the date(s) of each deviation must be reported.

- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

and

City of Evansville EPA  
101 N.W. Martin Luther King Jr. Blvd., Room 250  
Evansville, Indiana 47708

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and City of Evansville EPA on or before the date it is due.
- (d) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period.
- (e) All instances of deviations as described in Section B- Deviations from Permit Requirements Conditions must be clearly identified in such reports.
- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

### **Stratospheric Ozone Protection**

#### **C.21 Compliance with 40 CFR 82 and 326 IAC 22-1**

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Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

## SECTION D.1

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]

- (a) One (1) natural gas-fired turbine, identified as Unit #1, with a heat input capacity of 770 million BTU per hour, and exhausting to stack #1.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.1.1 Particulate Matter (PM) [326 IAC 6-1-16]

- (a) Pursuant to 326 IAC 6-1-16 (Vanderburgh County Particulate Limitations), the particulate matter emissions from Unit #1 shall not exceed 0.001 grains per dry standard cubic foot (gr/dscf).
- (b) Pursuant to 326 IAC 6-1-16 (Vanderburgh County Particulate Limitations), the particulate matter emissions from Unit #1 shall not exceed 1.74 tons per year.

#### D.1.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

- (a) The Permittee shall use only natural gas as fuel for Unit #1.
- (b) Emissions of nitrogen oxides (NO<sub>x</sub>) from Unit #1 shall not exceed 0.32 lb/MMBtu.
- (c) The input of natural gas to the Unit #1 turbine shall not exceed 1,519 million cubic feet (MMCF) per year.

These limits are required to limit the potential to emit of nitrogen oxides (NO<sub>x</sub>) from Unit 1 to less than 250 tons per 12 consecutive month period. Compliance with these limits makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable to Unit #1 and is necessary to maintain the status of Unit # 2 as originally permitted, as a PSD minor mod to an existing PSD minor source.

### Compliance Determination Requirements

#### D.1.3 Testing Requirements [326 IAC 2-7-6(1),(6)]

Within 180 days after issuance of this permit, the Permittee shall perform NO<sub>x</sub> stack testing for Unit 1 to demonstrate compliance with Condition D.1.2(b). Testing will be conducted utilizing methods as approved by the Commissioner, and in accordance with Section C - Performance Testing.

### Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

#### D.1.4 Record Keeping Requirements

- (a) To document compliance with Condition D.1.2(c), the Permittee shall maintain records in accordance with (1) and (2) below. Records shall be taken monthly and shall be sufficient to document compliance with Condition D.1.2(c).
- (1) Calendar dates covered in the compliance determination period;
- (2) Actual natural gas usage since the last compliance determination period.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

#### D.1.5 Reporting Requirements

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A quarterly summary of the information to document compliance with Condition D.1.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

## SECTION D.2

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]

- (b) One (1) natural gas-fired turbine, identified as Unit #2, with a heat input capacity of 900 million BTU per hour (lower heating value (LHV) at 60EF), utilizing water injection for NO<sub>x</sub> emissions reduction, and exhausting to stack #2. Fuel oils no.1 and no. 2 will be used as alternative fuels. An inlet fogging system may be used to enhance power production.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.2.1 Annual PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

Pursuant to emission limits established in Installation Permit No. 6078 issued by the Evansville Environmental Protection Agency on May 21, 1980, and a PSD Exemption letter issued by the State of Indiana Air Pollution Control Board on August 29, 1980:

- (a) The Permittee shall use only natural gas or No. 1 or No. 2 distillate oil as fuel for Unit #2.
- (b) Emissions of nitrogen oxides (NO<sub>x</sub>) from Unit #2 shall not exceed 0.13 lb/MMBtu when firing natural gas.
- (c) Emissions of sulfur dioxide (SO<sub>2</sub>) from Unit #2 shall not exceed 0.33 lb/MMBtu when firing distillate oil.
- (d) The input of natural gas to Unit #2 shall not exceed 3,605 million cubic feet (MMCF) per twelve (12) consecutive month period.
- (e) The input of distillate oil to Unit #2 shall not exceed 10,608 thousand gallons (kgal) per twelve (12) consecutive month period.
- (f) For every gallon of fuel oil that is used, natural gas usage shall be decreased by 252.4 cubic feet.

These limits are required to limit the potential to emit of nitrogen oxides (NO<sub>x</sub>) from Unit #2 to not more than 240 tons per 12 consecutive month period, and to limit the potential to emit of sulfur dioxide (SO<sub>2</sub>) from Unit #2 to not more than 225 tons per 12 consecutive month period, as required by the 1980 preconstruction approvals. Compliance with these limits makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable to the original installation of Unit #2.

#### D.2.2 Inlet Fogging PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

- (a) The Unit 2 inlet fogging system shall only be used from the first of May to the end of September each year (i.e., the restricted period).
- (b) Emissions of nitrogen oxides (NO<sub>x</sub>) from Unit #2 shall not exceed 0.13 lb/MMBtu when firing natural gas with the inlet fogging system in use.
- (c) Emissions of sulfur dioxide (SO<sub>2</sub>) from Unit #2 shall not exceed 0.33 lb/MMBtu when firing distillate oil with the inlet fogging system in use.
- (d) The input of natural gas to Unit 2 shall not exceed 914 million cubic feet (MMCF) per restricted period while the inlet fogging system is in use. This usage limit and the NO<sub>x</sub> emission limit in Condition D.2.2(b) limit the total NO<sub>x</sub> emissions with the fogging system in use to not more than 60.85 tons per restricted period.



- (e) The input of distillate oil to Unit 2 shall not exceed 1,888 thousand gallons (kgal) per restricted period while the inlet fogging system is in use. This usage limit and the SO<sub>2</sub> emission limit in Condition D.2.2(c) limit the total SO<sub>2</sub> emissions with the fogging system in use to not more than 40.05 tons per restricted period.
- (f) For every gallon of fuel oil that is used, natural gas usage shall be decreased by 252.4 cubic feet.

These limits are required to limit the potential to emit of this modification to not more than 39.5 tons of nitrogen oxides (NO<sub>x</sub>) and 39.5 tons sulfur dioxide (SO<sub>2</sub>) per 5 month restricted period. Compliance with these limits makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable to the installation and use of the Unit 2 inlet fogging system.

All fuel fired while the inlet fogging system is in use shall be included in the total fuel use for Unit #2 when demonstrating compliance with Condition D.2.1, to maintain the original permitting status of Unit #2 as a PSD minor modification to an existing PSD minor source.

D.2.3 Particulate Matter (PM) [326 IAC 6-1-2]

Pursuant to 326 IAC 6-1-2(a)(Nonattainment Area Particulate Limitations), particulate matter (PM) emissions from Unit #2 shall not exceed three-hundredths (0.03) grain per dry standard cubic foot (gr/dscf).

D.2.4 Sulfur Dioxide (SO<sub>2</sub>) [326 IAC 7-1.1-1]

Pursuant to Installation Permit No. 6078 issued by the Evansville Environmental Protection Agency on May 21, 1980, the Exemption from PSD Review letter issued by the Indiana Air Pollution Control Board on August 29, 1980, and 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations):

- (a) The sulfur dioxide (SO<sub>2</sub>) emissions from Unit #2 shall not exceed thirty-three hundredths (0.33) pound per MMBtu heat input while combusting distillate fuel oil, and
- (b) Unit 2 shall burn either No. 1 or No. 2 fuel oil with not more than 0.3% sulfur content, or natural gas.

D.2.5 New Source Performance Standard (NSPS) [326 IAC 12] [40 CFR 60, Subpart GG]

Pursuant to 40 CFR 60, Subpart GG (Stationary Gas Turbines), emissions from Unit #2 shall be limited as follows:

- (a) Nitrogen oxides (NO<sub>x</sub>) emissions, as required by 40 CFR 60.332, shall not exceed:

$$\text{STD} = 0.0075 \frac{(14.4)}{Y} + F,$$

where STD = allowable NO<sub>x</sub> emissions (percent by volume at 15 percent oxygen on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO<sub>x</sub> emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of 40 CFR 60.332.

Water injection shall be used to control NO<sub>x</sub> emissions to the level required by equation stated above. The water injection system shall be operating at the proper injection ratio, as determined by the initial compliance testing, whenever the turbines are in operation except during the 14 minute start-up and 14 minute shutdown periods.

- (b) Sulfur dioxide (SO<sub>2</sub>) emissions, as required by 40 CFR 60.333, shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis, or the Permittee shall only use fuel with a sulfur content less than or equal to 0.8 percent by weight.

## **Compliance Determination Requirements**

### **D.2.6 Testing Requirements [326 IAC 2-7-6(1),(6)]**

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- (a) Within sixty (60) days after initial start-up of the fogging system, the Permittee shall perform NO<sub>x</sub> stack tests for Unit #2 while firing natural gas. If the Permittee wishes to use distillate oil as an alternate fuel, the Permittee shall also perform NO<sub>x</sub> stack tests while firing distillate oil. Testing shall be conducted with the inlet fogging system in operation at the maximum water injection rate, and without the inlet fogging system in operation. Testing shall be conducted utilizing methods as approved by the Commissioner; and in accordance with Section C - Performance Testing.
- (b) IDEM may require additional compliance testing at any specific time when necessary to determine if the facility is in compliance. If additional testing is required by IDEM, compliance with the PM, SO<sub>2</sub>, and NO<sub>x</sub> limits specified in Conditions D.2.1, D.2.2, D.2.3 and D.2.4 shall be determined by performance tests conducted in accordance with Section C - Performance Testing.

### **D.2.7 Sulfur Dioxide Emissions and Sulfur Content**

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The Permittee shall demonstrate that the sulfur dioxide (SO<sub>2</sub>) emissions do not exceed thirty-three hundredths (0.33) pound per MMBtu when firing distillate oil and that the sulfur content of the oil does not exceed 0.3%, utilizing one or more of the following options.

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall document the sulfur content of the fuel oil by:
  - (1) Providing vendor analysis of fuel delivered, if accompanied by a certification; or
  - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
    - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
    - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or
- (b) Compliance with the SO<sub>2</sub> emission limit may also be determined by conducting a stack test for sulfur dioxide emissions from Unit #2, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, which is conducted with such frequency as to generate the amount of information required by (a) above. [326 IAC 7-2-1(b)].

A determination of noncompliance pursuant to either of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

### **D.2.8 Continuous Monitoring System [326 IAC 12] [40 CFR 60, Subpart GG]**

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Pursuant to 40 CFR 60, Subpart GG (Stationary Gas Turbines), a continuous monitoring system for the measurement of fuel consumption and the ratio of water to fuel being fired in the turbine, shall be installed, calibrated, operated, and maintained.

## **Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

### **D.2.9 Visible Emissions Notations**

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- (a) Visible emission notations of the Unit #2 stack exhaust shall be performed during normal daylight operations when combusting fuel oil at least once every 100 hours of fuel oil service. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

### **D.2.10 Sulfur Content and Nitrogen Content [326 IAC 12] [40 CFR 60, Subpart GG]**

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Pursuant to 40 CFR 60.334(b), the Permittee shall monitor the nitrogen and sulfur content of the fuel being fired in Unit #2. The frequency of determination of these values shall be as follows:

- (a) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.
- (b) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with the monitoring requirements.

The Permittee shall determine the nitrogen and sulfur content of the fuel pursuant to the methods and procedures specified in 40 CFR 60.335. The sulfur content information obtained from this monitoring may be used to document compliance with the limit stated in Conditions D.2.1, D.2.2, and D.2.4.

## **Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

### **D.2.11 Record Keeping Requirements**

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- (a) To document compliance with Conditions D.2.1 and D.2.2, the Permittee shall maintain records in accordance with (1) through (3) below. Records shall be taken monthly and shall be sufficient to document compliance with Conditions D.2.1 and D.2.2.
  - (1) Calendar dates covered in the compliance determination period;
  - (2) The dates and time of operation of the inlet fogging system, and
  - (3) Actual natural gas and fuel oil usage since the last compliance determination period. Fuel usage records shall differentiate the quantity of fuel used with the inlet fogging system in operation.
- (b) To document compliance with Conditions D.2.4 and D.2.7, the Permittee shall maintain records in accordance with (1) through (6) below.

- (1) Calendar dates covered in the compliance determination period;
- (2) Actual fuel oil usage since last compliance determination period and equivalent sulfur dioxide emissions;
- (3) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and

If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:

- (4) Fuel supplier certifications;
  - (5) The name of the fuel supplier; and
  - (6) A statement from the fuel supplier that certifies the sulfur content of the fuel oil.
- (c) To document compliance with Condition D.2.9, the Permittee shall maintain records of visible emission notations of the Unit #2 stack exhaust when firing distillate oil.
  - (d) To document compliance with Condition D.2.10, the Permittee shall maintain records of the nitrogen and sulfur content of all fuels combusted in Unit #2.
  - (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

#### D.2.12 Reporting Requirements

- (a) A quarterly summary of the information to document compliance with Condition D.2.1 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting form located at the end of this permit, or its equivalent, within thirty (30) days after the end of the quarter being reported.
- (b) A summary of the information to document compliance with Condition D.2.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting form located at the end of this permit, or its equivalent, within thirty (30) days after September 30 of each year.
- (c) The Permittee shall submit a semi-annual summary of the following:
  - (1) For nitrogen oxides:
    - (A) One-hour periods during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with Condition D.2.5(a); and
    - (B) Any period during which the fuel bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the initial performance test.

The summary shall contain the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under 40 CFR 60.335(a).

- (2) For sulfur dioxides, any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.3 percent by weight.

(3) For ice fog and emergency fuel as required by 40 CFR 60.334(c)(3) and (4).

The reports in this section shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, in addition to the following address:

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

within thirty (30) days after the end of the six (6) month period being reported.

- (d) To document compliance with Condition D.2.9, the Permittee shall certify, on the form provided, that natural gas was fired in the turbine at all times during the report period. Alternatively, the Permittee shall report the number of days during which an alternate fuel was burned during the report period. The form shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, within thirty (30) days after the end of the quarter being reported.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY  
  
PART 70 OPERATING PERMIT  
CERTIFICATION**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001

**This certification shall be included when submitting monitoring, testing reports/results  
or other documents as required by this permit.**

Please check what document is being certified:

- 9 Annual Compliance Certification Letter
- 9 Test Result (specify) \_\_\_\_\_
- 9 Report (specify) \_\_\_\_\_
- 9 Notification (specify) \_\_\_\_\_
- 9 Other (specify) \_\_\_\_\_

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**P.O. Box 6015  
100 North Senate Avenue  
Indianapolis, Indiana 46206-6015  
Phone: 317-233-5674 Fax: 317-233-5967**

**CITY OF EVANSVILLE ENVIRONMENTAL PROTECTION AGENCY**

**101 N.W. Martin Luther King Jr., Room 250  
Evansville, Indiana 47708  
Phone: 812-426-5597 Fax: 812-426-5399**

**PART 70 OPERATING PERMIT  
EMERGENCY/DEVIATION OCCURRENCE REPORT**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001

**This form consists of 2 pages**

**Page 1 of 2**

Check either No. 1 or No.2

- 9** 1. This is an emergency as defined in 326 IAC 2-7-1(12)  
C The Permittee must notify the Office of Air Quality (OAQ), within four **(4)** business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and  
C The Permittee must submit notice in writing or by facsimile within two **(2)** days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16
- 9** 2. This is a deviation, reportable per 326 IAC 2-7-5(3)(c)  
C The Permittee must submit notice in writing within ten **(10)** calendar days

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:

Control Equipment:

Permit Condition or Operation Limitation in Permit:

Description of the Emergency/Deviation:

Describe the cause of the Emergency/Deviation:

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency/Deviation started:
Date/Time Emergency/Deviation was corrected:
Was the facility being properly operated at the time of the emergency/deviation?    Y    N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency/deviation:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: \_\_\_\_\_  
Title / Position: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_



**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**PART 70 OPERATING PERMIT  
UNIT 2 NATURAL GAS FIRED CERTIFICATION**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
Permit Mod No.: 163-14083-00001

**This certification shall be included when submitting monitoring, testing reports/results  
or other documents as required by this permit.**

Report period

Beginning: \_\_\_\_\_

Ending: \_\_\_\_\_

Unit Affected: CT 2

Alternate Fuel

Days burning alternate fuel

From

To

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title/Position: \_\_\_\_\_

Date: \_\_\_\_\_

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Quarterly Report: Unit #1**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
Permit Mod No.: 163-14083-00001  
Facility: Natural Gas Turbine (Unit 1)  
Parameter: PSD Limit (NO<sub>x</sub>)  
Limit: 1519 million cubic feet of natural gas used per 12 consecutive month period

YEAR: \_\_\_\_\_

Month	Natural Gas Usage This Month (MMCF)	Natural Gas Usage Previous 11 Months (MMCF)	Total Natural Gas Usage for 12 Month Period (MMCF)	Usage Limit (MMCF)
				1519
				1519
				1519

**9** No deviation occurred in this quarter.

**9** Deviation/s occurred in this quarter.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Quarterly Report: Unit #2 Natural Gas**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
Permit Mod No.: 163-14083-00001  
Facility: Natural Gas/Fuel Oil Turbine (Unit #2)  
Parameter: PSD Limit (SO<sub>2</sub>, NO<sub>x</sub>) (Natural Gas)  
Limit: 3605 million cubic feet of natural gas used per 12 consecutive month period

YEAR: \_\_\_\_\_

Month	Natural Gas Usage This Month (MMCF)	Natural Gas Usage Previous 11 Months (MMCF)	Total Natural Gas Usage for 12 Month Period (MMCF)	Usage Limit (MMCF)
				3605*
				3605*
				3605*

\* For every gallon of fuel oil used, natural gas usage shall be decreased by 252.4 cubic feet.

**9** No deviation occurred in this quarter.

**9** Deviation/s occurred in this quarter.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Quarterly Report: Unit #2 Distillate Oil**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
Permit Mod No.: 163-14083-00001  
Facility: Natural Gas/Fuel Oil Turbine (Unit #2)  
Parameter: PSD Limit (PM, SO<sub>2</sub>, NO<sub>x</sub>) (Distillate Oil)  
Limits: 0.3% sulfur content, by weight  
0.33 lb/MMBtu SO<sub>2</sub>  
10,608 thousand gallons of distillate fuel oil used per 12 consecutive month period

YEAR: \_\_\_\_\_

Month	Distillate Oil Usage This Month (kgals)	Distillate Oil Usage Previous 11 Months (kgals)	Total Distillate Oil Usage for 12 Month Period (kgals)	Usage Limit (kgals)
				10,608
				10,608
				10,608

**9** No deviation occurred in this quarter.

**9** Deviation/s occurred in this quarter.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Seasonal Inlet Fogging Report: Natural Gas**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T 163-6899-00001  
Permit Mod No.: T 163-14083-00001  
Facility: Natural Gas/Fuel Oil Turbine **with Inlet Fogging in Use** (Unit 2)  
Parameter: PSD Minor Modification Limit (SO<sub>2</sub>, NO<sub>x</sub>) (Natural Gas)  
Limit: 914 million cubic feet of natural gas used per 5 consecutive month period

YEAR: \_\_\_\_\_

Month	May	June	July	August	September	Season Total	Season Limit
Natural Gas Usage This Month (MMCF)							914 * MMCF
Equivalent NO <sub>x</sub> Emissions (Tons)							60.85 tons NO <sub>x</sub>

\* For every gallon of fuel oil used, natural gas usage shall be decreased by 252.4 cubic feet.

- 9** No deviation occurred in this quarter.  
**9** Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Attach a signed certification to complete this report.**

**This form is due within thirty (30) days after September 30.**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Seasonal Inlet Fogging Report: Distillate Oil**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
Permit Mod No.: 163-14083-00001  
Facility: Natural Gas/Fuel Oil Turbine **with Inlet Fogging in Use** (Unit #2)  
Parameter: PSD Minor Modification Limit (SO<sub>2</sub>, NO<sub>x</sub>) (Distillate Oil)  
Limits: No. 1 or No. 2 fuel oil with not more than 0.3% sulfur content, by weight  
1888 kgals of distillate fuel oil used per 5 consecutive month period

YEAR: \_\_\_\_\_

Month	May	June	July	August	September	Season Total	Season Limit
Distillate Oil Usage This Month (MMCF)							1888 * kgals
Equivalent SO <sub>2</sub> Emissions (Tons)							40.05 tons SO <sub>2</sub>

\* For every gallon of fuel oil used, natural gas usage shall be decreased by 252.4 cubic feet.

**9** No deviation occurred in this period.

**9** Deviation/s occurred in this period.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Attach a signed certification to complete this report.**

**This report is due within thirty (30) days after September 30.**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**PART 70 OPERATING PERMIT  
QUARTERLY COMPLIANCE MONITORING REPORT**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001

Months: \_\_\_\_\_ to \_\_\_\_\_ Year: \_\_\_\_\_

This report is an affirmation that the source has met all the compliance monitoring requirements stated in this permit. This report shall be submitted quarterly. Any deviation from the compliance monitoring requirements and the date(s) of each deviation must be reported. Additional pages may be attached if necessary. This form can be supplemented by attaching the Emergency/Deviation Occurrence Report. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

**9 NO DEVIATIONS OCCURRED THIS REPORTING PERIOD**

**9 THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD.**

Compliance Monitoring Requirement (e.g. Permit Condition D.1.3)	Number of Deviations	Date of each Deviation

Form Completed By: \_\_\_\_\_  
Title/Position: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

## Indiana Department of Environmental Management Office of Air Quality

### Addendum to the Technical Support Document for a Significant Source Modification and a Significant Permit Modification

Source Name:	Southern Indiana Gas and Electric Company (SIGECO) Broadway Avenue Generating Station
Source Location:	2600 Broadway Avenue, Evansville, Indiana 47712
County:	Vanderburgh
SIC Code:	4911
Operation Permit No.:	T 163-6899-00001
Operation Permit Issuance Date:	February 10, 1999
Significant Source Modification No.:	163-12400-00001
Significant Permit Modification No.:	163-14083-00001
Permit Reviewer:	Vickie Cordell

On May 9, 2001, the Office of Air Quality (OAQ) had a notice published in the Evansville Courier, Evansville, Indiana, stating that Southern Indiana Gas and Electric Company (SIGECO), Broadway Avenue Generating Station, had applied for approval to construct and operate an inlet fogging system for the simple cycle combustion turbine identified as Unit 2. The public notice also stated that OAQ proposed to issue the source modification and permit modification for this operation and provided information on how the public could review the proposed approvals and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On June 8, 2001, SIGECO submitted the following comments on the proposed permit modification.

#### **Comment 1:**

##### **Operation Condition D.1.1 - PM Emission Limit for Unit 1**

The current Indiana State Implementation Plan ("SIP") contains a particulate emission limit applicable to Unit 1 at 326 IAC 6-1-16 ("SIP Limit"). The SIP Limit sets forth the particulate emission limit for Unit 1 as 0.001 grains/dscf, which equates to 1.74 tons PM per year. When the particulate emission limit for Unit 1 was established at 326 IAC 6-1-16, among the criteria for the establishment of the emission limit for the Unit was the Unit's Potential To Emit. A review of the SIP limit of 0.001 grains/dscf (1.74 tons PM per year) clearly indicates that the emission limit was miscalculated. The particulate emission limit derived from the Potential To Emit for Unit 1, when calculated using U.S. EPA document AP-42, Compilation of Air Pollutant Emission Factors (1995), is 65.09 tons of PM per year, as compared to the particulate emission limit of 1.74 tons of PM per year set out in 326 IAC 6-1-16. Therefore, the lowest possible emission rate for particulate for Unit 1 based upon the correct Potential To Emit criteria is 65.09 tons of PM per year, or 6591.7 MMcf/yr, and not the erroneous particulate emission limit set forth in 326 IAC 6-1-16.

On or about October 29, 1998, SIGECO filed its Petition to Amend Rule Concerning Particulate Matter Emission Limits For Southern Indiana Gas and Electric Company in Vanderburgh County (hereinafter "SIP Revision Petition"). SIGECO's SIP Revision Petition requests that the Commissioner propose to amend the particulate emission limit promulgated in 326 IAC 6-1-16 for BAGS Unit 1, and more specifically, to revise the particulate emission limit of 1.74 tons PM per year (0.001 gr/dscf) to 65.09 tons PM per year (6591.7 MMcf/yr). The SIP Revision Petition is still currently pending. IDEM has never responded to the SIP Revision Petition.



On February 10, 1999, IDEM issued Operating Permit No. T163-6899-00001 ("Part 70 Permit") for the BAGS facility in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A. Despite the pendency of SIGECO's SIP Revision Petition and repeated efforts by SIGECO to address the erroneous particulate limit for Unit 1, IDEM issued the Part 70 Permit and carried over the erroneous particulate limit for Unit 1 into Facility Operation Condition D.1.1, which states as follows:

- (a) Pursuant to 326 IAC 6-1-16 (Vanderburgh County Particulate Limitations), the particulate matter emissions from Unit #1 shall not exceed 0.001 grains per dry standard cubic foot (gr/dscf).
- (b) Pursuant to 326 IAC 6-1-16 (Vanderburgh County Particulate Limitations), the particulate matter emissions from Unit #1 shall not exceed 1.74 tons per year. This is equivalent to a natural gas usage of 83.2 million cubic feet (MMCF) per twelve (12) consecutive month period.

The incorporation of a clearly erroneous particulate emission limit into SIGECO's Part 70 Permit jeopardized SIGECO's ability to comply with the provisions of Part 70 Permit as issued, and SIGECO was left with no choice but to file a petition for administrative review and request for stay of effectiveness with the Office of Environmental Adjudication (Cause No. 99-A-J-2234). SIGECO and IDEM stipulated to the stay of Facility Operation Condition D.1.1 on June 21, 1999. Administrative Cause No. 99-A-J-2234 is still pending before the Office of Environmental Adjudication, and the stay is still in place.

On March 27, 2000, SIGECO requested a variance from the SIP Limit (Variance). IDEM granted the Variance on June 30, 2000, and calculated the new limit using AP-42, Compilation of Air Pollutant Emission Factors (April 2000) for uncontrolled natural gas turbines to get a revised particulate matter emission limit of 22.26 tpy.

In granting the Variance IDEM agreed that the SIP Limit of 1.74 tpy was incorrect. In calculating the new particulate matter emission limit, IDEM noted that the air emission factor used by IDEM in calculating the Variance was based upon natural gas-fired turbines using water-steam injection. IDEM further asserted that water-steam injection acts as a control for nitrogen oxide and sulfur dioxide emissions, but not for particulate matter. Even though Unit 1 does not use water-steam injection, IDEM thought it was appropriate to use the referenced air emission factor since SIGECO's request for variance affected only the limit for particulate matter emissions. SIGECO does not agree that the appropriate air emission factors to be used in calculating the particulate matter emission limit for this Unit to be the AP-42 air emission factors set out in the April 2000 Edition, Supp F, because said air emission factors do not account for the differences between controlled and uncontrolled natural gas-fired turbines.

On November 1, 2000, the Air Pollution Control Board published as a proposed rule in the Indiana Register its amendments to rules concerning particulate matter emission limits for natural gas combustion sources, APCB 99-218 (hereinafter "PM Rule Revision"). In the PM Rule Revision IDEM proposed to remove those particulate matter emission limitations established in 326 IAC 6-1-8.1 through 326 IAC 6-1-18 for combustion sources that burn only natural gas. This revised rule is applicable to Unit 1. Thus, IDEM has proposed to remove the particulate emission limit for natural gas combustion facilities, which proposal would include SIGECO's Unit 1.

With the passage of the Title V permit program in the 1990 Clean Air Act Amendments, as implemented in 40 CFR Part 70, Congress intended the Title V permit program to consolidate in a single document all of the federal Clean Air Act requirements applicable to a given facility. Congress did not intend that a Part 70 operating permit merely carry over errors from those previous emission limit requirements. In this case, the particulate matter emission limit at 326 IAC 6-1-16 applicable to BAGS Unit 1 was originally, and admittedly, calculated in error. Accordingly, SIGECO would reiterate its request that IDEM not carry over into its Modified Part 70 Operating Permit a particulate matter emission limit for Unit 1 which was clearly calculated in error, the same request made by SIGECO prior to IDEM's issuance of SIGECO's original Part 70 Permit.

### **Response to Comment 1:**

SIGECO should be aware that the IDEM has in fact responded to the "SIP Revision Petition." The IDEM prepared substitute rule language and was active in the air pollution control board's rule making activities to address this problem during 1999 and 2000. Unfortunately the rule that was final adopted on January 3, 2001, was recalled in response to the review that the Indiana Attorney General performs as part of the state rule making process. The Attorney General's office raised concerns regarding provisions that had not been amended by the air board, but were a part of the rule reviewed by the Attorney General. The IDEM modified the rule language and is presenting the rule for final adoption at the August 1, 2001, Air Board meeting. The revisions are expected to become effective later this year. The IDEM will submit this rule to the U.S. EPA as a revision to the State Implementation Plan. The OAQ further responded to SIGECO's request for relief from the particulate emission limit by issuing a one year variance from the Unit 1 PM limits to SIGECO on June 30, 2000.

The OAQ issues permits that are consistent with existing state law. While the state's new source review program provides authority to establish more stringent emission limitations when necessary to prevent violations of ambient air quality standards, neither it nor the Title V Operating Permit Program provide authority to disregard or revise emission limitations that are established in the rules. Indiana law provides the variance procedure to obtain relief from requirements that impose an undue burden.

SIGECO requested a new variance on June 21, 2001. The OAQ expects to approve the variance request and will address both the rule and the permit conditions at that time. The new variance will no longer be in effect once the state PM rule revision is final. However, the current Vanderburgh County particulate matter limit remains an applicable requirement for Unit 1 until both the state and federal rules are revised. Therefore, the condition cannot be omitted from the Title V permit at this time, and no change has been made in response to this comment.

### **Comment 2:**

#### **Operation Condition D.1.2 - Fuel Usage Limit for Unit 1**

The current draft of the Modified Part 70 Permit has the following fuel usage limits for Unit 1 in Operation Condition D.1.2:

- (a) The Permittee shall use only natural gas as fuel for Unit #1.
- (b) Emissions of nitrogen oxides (NO<sub>x</sub>) from Unit #1 shall not exceed 0.32 lb/MMBtu.
- (c) The input of natural gas to the Unit #1 turbine shall not exceed 1,519 million cubic feet.

According to the accompanying Technical Support Document, the reason for including a fuel usage limit based upon NO<sub>x</sub> emissions is to ensure that emissions from Unit 1 remain below PSD major source levels after the particulate matter emission limit is lifted pursuant to the final promulgation of IDEM's PM Revision Rule (APCB 99-218). [Technical Support Document at Page 1 of 25]. SIGECO would like to point out, however, that the fuel usage limit of 1,519 MMCF per year, as set out in Operation Condition D.1.2 was calculated in error due to the use of the wrong AP-42 air emission factor for natural gas turbines.

According to the Technical Support Document, the fuel usage limit was calculated based upon the April 2000 AP-42 air emission factor for filterable PM [Technical Support Document at Page 2 of 21]. Moreover, IDEM asserts in the Technical Support Document that 326 IAC 6 only limits filterable PM. SIGECO has conducted a review of the current version of 326 IAC 6, and historic versions of 326 IAC 6, and does not find this limiting provision in any of the versions of the regulation that were reviewed for

these comments.

As noted previously, Unit 1 was constructed in 1970, and is an uncontrolled unit. The air emission factor used by IDEM to calculate the fuel usage limit, AP-42 Fifth Edition Supplement F (April 2000), does not take into account the differences between controlled and uncontrolled natural gas-fired turbines. The air emission factor used by IDEM assumes water injection and does not segregate between solid and condensable fractions. IDEM bases its use of the April 2000, Supp F, air emission factors on the assumption that water injection will not affect particulate matter emissions. This is flawed. Introducing water into the gas stream has the effect of removing particulate. A more representative air emission factor for an uncontrolled unit such as BAGS Unit 1 is AP-42 Supplement B (October 1996), which is more sensitive to combustion turbine control methods. Therefore, SIGECO would request that the fuel usage limit set forth in Operation Condition D.1.2. be re-calculated using a more appropriate air emission factor.

#### **Response to Comment 2:**

SIGECO is correct that the cited provisions of D.1.2. provide limitations on the potential to emit Nitrogen Oxides. However, Condition D.1.2, the new fuel usage limit for Unit 1, is based on the April 2000 AP-42 emission factor for  $\text{NO}_x$ , not PM. The spreadsheet for Unit 1 (TSD Appendix A, Page 1 of 5) shows the equation used to determine the fuel use limit. For reference, this spreadsheet has also been included as Appendix A of this Addendum. Unit 1 is categorized as an uncontrolled natural gas-fired turbine. This category has an "A" rated  $\text{NO}_x$  emission factor in the April 2000 AP-42 supplement.

In the latest version of AP-42 Section 3.1, Table 3.1-2a is titled "Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines", and all of the factors are presented under the heading "Emission Factors - Uncontrolled". As noted by SIGECO, the filterable and condensable PM emission factors for natural gas have a footnote that the emission factors are based on combustion turbines using water-steam injection.

The background report for the April 2000 revision is titled Emission Factor Documentation for AP-42 Section 3.1 Gas Fired Turbines. This document explains that "Section 3.1 has been updated to incorporate new available data on this source category. New information has been used to better characterize this source category and to develop improved criteria pollutant emission factors." It also states that "PM emissions data for uncontrolled gas turbines were not available. Therefore, emission factors for condensable and filterable PM were developed for natural gas-fired gas turbines using water-steam injection control and distillate oil-fired gas turbines using water-steam injection control. Water-steam injection is not expected to have a large effect on PM emissions for gas turbines."

OAQ has found no reason to dispute EPA's expectation regarding the appropriateness of the updated PM emission factors. Neither SIGECO nor an Internet search provided documentation of water or steam injection altering the emission rate of filterable PM from combustion turbines. OAQ continues to believe that the April 2000 emission factors are the most accurate available for Broadway Avenue Unit 1 and Unit 2. Therefore, no change has been made to any of the emission factors used for either unit.

The IDEM directs SIGECO's attention to the provisions of Indiana's rules that make it clear that nearly all of the PM emission limits in 326 IAC 6 include only "filterable PM." Both 326 IAC 6-1-3 and 326 IAC 3-6-5(a) establish variations of "Method 5" contained in 40 CFR 60 Appendix A as the reference methods for determining compliance with PM emission limits. That method only collects "filterable PM." The rules contain special provisions when there is intent to regulate "non-filterable PM." An example of such a provision is 326 IAC 6-1-10.1(f)(5) regarding emissions from sinter plants. No such provision is contained in 326 IAC 6-1-16 regulating particulate matter emissions at the Broadway Avenue Generating Station.

For further clarity, the portion of the TSD titled **Emission Calculations / Revised Annual Limits for Units 1 and 2** is included here with revised wording to make the distinction clearer between the PM and NO<sub>x</sub> limits, and to better separate the discussion of the past fuel limits and the new limits.

### **Emission Calculations / Revised Annual Limits for Units 1 and 2**

See Appendix A (pages 1 through 3) of the Technical Support Document for detailed emissions calculations. A NO<sub>x</sub> emission limit and new fuel limit were established for Unit 1 to ensure that NO<sub>x</sub> emissions from Unit 1 remain below major source levels. Also, the use of updated emission factors for natural gas and distillate oil fired turbines resulted in revision of the annual fuel usage limits for Unit 2.

326 IAC 6-1-16 (Vanderburgh County Particulate Limitations) limits the particulate matter emissions from Unit 1 to not more than 0.001 grains per dry standard cubic foot (gr/dscf) and not more than 1.74 tons per year. In earlier permit reviews for Unit 1 these PM limits were considered sufficient to restrict the emissions of all pollutants below Prevention of Significant Deterioration (PSD) major source levels. However, 326 IAC 6 only limits filterable PM, and the filterable PM emissions from natural gas combustion are very low. Therefore, these PM limits were determined to be insufficient to restrict NO<sub>x</sub> emissions from Unit 1 below the PSD major source level of 250 tons per year. The previous annual fuel limit for Unit 1 has been deleted. A new fuel limit has been derived using the April 2000 AP-42 NO<sub>x</sub> emission factor, and a lb/MMBtu NO<sub>x</sub> limit has been added to the requirements for Unit 1, to ensure that the NO<sub>x</sub> emissions from Unit 1 do not exceed 249 tons per year.

The pre-construction approval for Unit 2, Installation Permit No. 6078, was issued on May 21, 1980, by the Evansville Environmental Protection Agency. Unit 2 was permitted as a minor modification to a minor source pursuant to PSD. An Exemption from PSD and Emission Offset requirements was also issued on August 29, 1980, by the Indiana Air Pollution Control Board confirming that the construction was determined to be exempt from PSD review following the 1980 revisions to the federal PSD regulations. Both of these determinations were based on the Broadway Avenue station being considered a minor source prior to the construction of Unit 2. Therefore, emissions from Unit 1 must continue to be limited to less than 250 tons for each criteria pollutant, or Unit 2 will become subject retroactively to BACT requirements.

In the Title V permit issued February 10, 1999, based on AP-42 particulate matter emission factors current at that time, Unit 1 was given a natural gas usage limit of 83.2 million cubic feet (MMCF) per twelve (12) consecutive month period. At that time, Unit 2 was given limits of less than 1100 million cubic feet (MMCF) of natural gas and less than 5380 thousand gallons (kgal) of fuel oil per twelve (12) consecutive month period to assure compliance with the tons per year NO<sub>x</sub> and SO<sub>2</sub> limits in the original pre-construction approvals. The annual natural gas fuel usage limits for both units have been revised in this modification based on updated AP-42 emission factors for NO<sub>x</sub>. The distillate oil fuel limit for Unit 2 was revised based on the updated AP-42 SO<sub>2</sub> emission factor.

At the time the original Title V permit was written, Unit 1 was believed to be unable to comply with the 326 IAC 6-1-16 PM grain loading limit. A revision to the state PM rule is in progress that will remove the grain loading and tons/year PM limits for this unit but it will not become effective until later in 2001 or 2002 and will still need to be incorporated into the Indiana State Implementation Plan (SIP). A Compliance Schedule was included in the original Title V permit to address this delay; and a fuel input limit was added to the PM condition to assure compliance with the 1.74 lb MMBtu limit. However, based on the new NO<sub>x</sub>-based annual fuel limit for Unit 1 and the April 2000 AP-42 emission factor for filterable PM, the unit is currently believed to be in compliance with the annual PM limit. Therefore, the more restrictive PM-based fuel usage limit has been removed from the PM condition and the Compliance Schedule has been deleted.

OAQ continues to believe that the April 2000 AP-42 emission factors are the most appropriate for all emission factors for each unit. No support has been found for the supposition that water or steam injection used for NO<sub>x</sub> control in a combustion turbine can remove filterable particulate matter from the exhaust stream.

No change will be made to the TSD. The OAQ prefers that the TSD reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

Upon further review, the OAQ has decided to make the following additional changes (bolded language has been added; the language with a line through it has been deleted.):

1. The Responsible Official has recently changed. Therefore, Condition A.1 has been updated:

**A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]**

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The Permittee owns and operates a stationary electric utility peaking station.

Responsible Official:	<del>J. Gordon Hurst</del> <b>Ron Jochum</b>
Source Address:	2600 Broadway Avenue, Evansville, Indiana 47712
Mailing Address:	20 Northwest Fourth Street, Evansville, Indiana 47741
SIC Code:	4911
County Location:	Vanderburgh
County Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD rules

2. Condition D.2.2 was revised for clarity and to keep the inlet fogging limits an independent condition, rather than referring back to Condition D.2.1 (the Annual PSD Minor Limit condition):

**D.2.2 Inlet Fogging PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]**

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- (d) The input of natural gas to Unit 2 shall not exceed 914 million cubic feet (MMCF) per restricted period while the inlet fogging system is **in** use. This usage limit and the NO<sub>x</sub> emission limit in Condition ~~D.2.1(b)~~ **D.2.2(b)** limit the total NO<sub>x</sub> emissions with the fogging system in use to not more than 60.85 tons per restricted period.
- (e) The input of distillate oil to Unit 2 shall not exceed 1,888 thousand gallons (kgal) per restricted period while the inlet fogging system is **in** use. This usage limit and the SO<sub>2</sub> emission limit in Condition ~~D.2.1(e)~~ **D.2.2(c)** limit the total SO<sub>2</sub> emissions with the fogging system in use to not more than 40.05 tons per restricted period.

3. Condition D.2.11(a) was revised to reflect the addition of the record keeping requirements for the inlet fogging:

D.2.11 Record Keeping Requirements

- (a) To document compliance with Conditions D.2.1 and D.2.2, the Permittee shall maintain records in accordance with (1) ~~and (2)~~ **through (3)** below. Records shall be taken monthly and shall be sufficient to document compliance with Conditions D.2.1 and D.2.2.
4. The following addition to Condition D.2.7 was shown in bold on page 12 of the Technical Support Document but was erroneously omitted from the public notice version of the revised permit pages:

D.2.7 Sulfur Dioxide Emissions and Sulfur Content

- (b) Compliance **with the SO<sub>2</sub> emission limit** may also be determined by conducting a stack test for sulfur dioxide emissions from Unit #2, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, which is conducted with such frequency as to generate the amount of information required by (a) above. [326 IAC 7-2-1(b)].

# Appendix A: Emission Calculations

TSD Addendum App A Page 1 of 1

## Natural Gas-Fired Turbine

Unit: BAGS CT No. 1

Company Name: SIGECO Broadway Avenue  
Address City IN Zip: Evansville, IN 47712  
Source Mod No.: 163-12400-00001  
Reviewer: Vickie Cordell  
Date: May 3, 2001

Heat Input Capacity

MMBtu/hr

770.0

Sulfur content of fuel (S)

%

0.0006

### Criteria Pollutant

Emission Factor in lb/MMBtu*	Condensable PM 0.0047	Filterable PM 0.0019	SO2 0.94(S) (= .094)	NOx 0.3200	VOC 0.0021	CO 0.0820
Potential Emissions in tons/yr	15.85	6.41	1.90	1079.23	7.08	276.55
<b>Emissions as limited, in tons/yr**</b>	3.66	<b>1.48</b>	0.44	<b>249.00</b>	1.63	63.81

Hazardous Air Pollutant (HAP)	Emission Factor * (lbs/MMBtu)	Total Potential Emissions (tons/yr)	Emissions as Limited (tons/yr)**
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Acetaldehyde	4.000E-05	0.135	0.03
Acrolein	6.400E-06	0.022	0.00
Benzene	1.200E-05	0.040	0.01
1,3 Butadiene	4.300E-07	0.001	0.00
Ethylbenzene	3.200E-05	0.108	0.02
Formaldehyde	7.100E-04	2.395	0.55
PAHs	1.800E-04	0.607	0.14
Propylene Oxide	2.900E-05	0.098	0.02
Toluene	1.300E-04	0.438	0.10
Xylene	6.400E-05	0.216	0.05
<b>TOTAL</b>		<b>4.06</b>	<b>0.94</b>

Napthalene***	1.300E-06	0.004	0.00
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### Methodology

\* From AP-42, Section 3.1 Tables 3.1-1 (uncontrolled values), and 3.1-2a, and 3.1-3, updated 4/00.

Emission (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hrs/yr x 1 ton/ 2,000 lbs

PM-10 emission factor is total of condensable and filterable emission factors.

**\*\* Emissions as limited, @ not more than 249 tons/yr of NOx; equivalent to not more than 1519 MMCF/yr of natural gas.**

(249 tons NOx/yr X 2000 lb/ton) / (0.32 lb NOx/MMBtu X 1024 Btu/scf) = 1519.7754 MMCF/yr

Heating value of natural gas is reported to be 1024 Btu/scf. Emission factor conversion: lb/MMBtu X 1024 = lb/MMCF.

\*\*\*Speciated PAH not included in HAPs table to avoid double counting of emissions

Notes: Potential HAPs emissions included for information only.

The AP-42 factors for VOC and some of the HAPs have a "D" rating, which indicates that they are only expected to provide an order-of-magnitude value.

**Indiana Department of Environmental Management  
Office of Air Quality,  
Evansville EPA, and IDEM Southwest Regional Office**

**Technical Support Document (TSD) for a Significant Source Modification  
and Significant Permit Modification to a Part 70 Operating Permit**

**Source Background and Description**

<b>Source Name:</b>	Southern Indiana Gas and Electric Company (SIGECO) Broadway Avenue Generating Station
<b>Source Location:</b>	2600 Broadway Avenue, Evansville, Indiana 47712
<b>County:</b>	Vanderburgh
<b>SIC Code:</b>	4911
<b>Operation Permit No.:</b>	T 163-6899-00001
<b>Operation Permit Issuance Date:</b>	February 10, 1999
<b>Significant Source Modification No.:</b>	163-12400-00001
<b>Significant Permit Modification No.:</b>	163-14083-00001
<b>Permit Reviewer:</b>	Vickie Cordell

The Office of Air Quality (OAQ) has reviewed a source modification application from Southern Indiana Gas and Electric Company (SIGECO) Broadway Avenue Generating Station relating to the addition of inlet fogging to the simple cycle combustion turbine identified as Unit 2, and a change in the facility description. The preconstruction review is Source Modification 163-12400-00001; the new and revised conditions are incorporated into the Title V permit through Permit Modification 163-14083-00001.

The source requested fuel usage limits so that Prevention of Significant Deterioration (PSD) is not applicable to the modification, and the addition of the phrase "lower heating value (LHV) at 60EF" to the Unit 2 facility description. The source modification also includes a correction to the fuel sulfur content and SO<sub>2</sub> emission limit for Unit 2. An additional NO<sub>x</sub> limit was added for the older turbine at the station, identified as Unit 1, to ensure that emissions from Unit 1 remain below PSD major source levels. The use of updated emission factors for natural gas and distillate oil fired turbines resulted in revision of the previously-established annual fuel usage limits for Units 1 and 2..

Additional conditions and revisions to previous conditions in the Title V permit are shown in bold and strikeout in this TSD beginning on page 7, under the heading **Permit Revision**.

**History**

On June 16, 2000, SIGECO submitted an application to the OAQ requesting to add an inlet fogging system to the Unit 2 turbine at their Broadway Avenue Generating Station. The Broadway Avenue Station was issued a Part 70 permit on February 10, 1999. This is the first source modification and the first permit modification to the Part 70 permit; no administrative amendments have been issued.

**Enforcement Issue**

There are no enforcement actions pending for the Broadway Avenue Generating Station.

**Recommendation**

The staff recommends to the Commissioner that the Part 70 Significant Source Modification be approved. This recommendation is based on the following facts and conditions:



Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on June 16, 2000. Additional information was received on July 14, 2000; January 22, 2001; February 14, 2001; March 6, 2001; and April 9, 2001.

## **Emission Calculations / Revised Annual Limits for Units 1 and 2**

See Appendix A (pages 1 through 3) of this document for detailed emissions calculations. New NO<sub>x</sub> emission and fuel limits had to be established for Unit 1 to ensure that emissions from Unit 1 remain below major source levels. Also, the use of updated emission factors for natural gas and distillate oil fired turbines resulted in revision of the annual fuel usage limits for Unit 2.

326 IAC 6-1-16 (Vanderburgh County Particulate Limitations) limits the particulate matter emissions from Unit 1 to not more than 0.001 grains per dry standard cubic foot (gr/dscf) and not more than 1.74 tons per year. However, 326 IAC 6 only limits filterable PM, and the filterable PM emissions from natural gas combustion are very low. Therefore, these PM limits were determined to be insufficient to restrict all emissions from Unit 1 below PSD significance levels. A lb/MMBtu NO<sub>x</sub> limit has been added to the requirements for Unit 1.

The pre-construction approval for Unit 2, Installation Permit No. 6078, was issued on May 21, 1980, by the Evansville Environmental Protection Agency. Unit 2 was permitted as a minor modification to a minor source pursuant to PSD. An Exemption from PSD and Emission Offset requirements was also issued on August 29, 1980, by the Indiana Air Pollution Control Board confirming that the construction was determined to be exempt from PSD review following the 1980 revisions to the federal PSD regulations. Therefore, emissions from Unit 1 must continue to be limited to less than 250 tons for each criteria pollutant, or Unit 2 will become subject retroactively to BACT requirements.

Based on AP-42 emission factors current at the time the Broadway Avenue Title V permit was issued, Unit 1 was given a natural gas usage limit of 83.2 million cubic feet (MMCF) per twelve (12) consecutive month period. Unit 2 was given limits of less than 1100 million cubic feet (MMCF) of natural gas and less than 5380 thousand gallons (kgal) of fuel oil per twelve (12) consecutive month period. These annual fuel usage limits for both units have been revised in this modification based on updated AP-42 emission factors.

At the time the original Title V permit was written, Unit 1 was believed to be unable to comply with the 326 IAC 6-1-16 PM grain loading limit. A revision to the state PM rule is in progress that will remove the grain loading and tons/year PM limits for this unit but it will not become effective until later in 2001 and will still need to be incorporated into the Indiana State Implementation Plan (SIP). A Compliance Schedule was included in the original Title V permit to address this delay; and a fuel input limit was added to the PM condition to assure compliance with the 1.74 lb MMBtu limit. Based on the April 2000 AP-42 emission factor for filterable PM and the new fuel limit for NO<sub>x</sub> the unit is currently believed to be in compliance. Therefore, the fuel usage limit has been removed from the PM condition and the Compliance Schedule has been deleted.

## **Emission Calculations / Potential To Emit of Modification**

See Appendix A (pages 4 and 5) of this document for detailed emissions calculations for the modification. The potential increase in emissions from the addition of inlet fogging is limited to less than 40 tons of NO<sub>x</sub>, and less than 40 tons of SO<sub>2</sub>, below the threshold for a PSD major modification pursuant to 40 CFR 52.21. Therefore, PSD does not apply to this modification.

No significant increase in the overall potential to emit (PTE) of any regulated pollutant is expected from the use of the inlet fogging system. It is noted that some turbines have demonstrated a slight decrease in the emission rate of oxides of nitrogen ( $\text{NO}_x$ ) with inlet fogging due to the reduction in combustion temperature, but this decrease is not found consistently. This reaction is also the basis for the use of water injection systems designed for  $\text{NO}_x$  control. Lower combustion temperatures and lower  $\text{NO}_x$  emissions from water injection are generally accompanied by an increase in carbon monoxide (CO) emissions. Therefore, it is possible that CO emissions may increase slightly with the implementation of inlet fogging. However, no CO testing results are available for inlet fogging systems, and no stack testing for CO has been conducted for the turbines at the Broadway Avenue Station. All emissions were calculated using the emission factors provided in United States Environmental Protection Agency (U.S. EPA) Compilation of Air Pollutant Emission Factors (AP-42, Fifth Edition), Section 3.1 Table 3.1-1, as updated April 2000. The additional fuel limitations imposed on Unit 2 to limit any increase in  $\text{NO}_x$  and  $\text{SO}_2$  emissions will also limit any increase in CO well below the PSD significance level of 100 tons.

Combustion turbines operate more efficiently at lower inlet air temperatures. The inlet fogging system produces fine, fog-sized water droplets that are carried by the inlet stream directly into the combustion turbine compressor section. The evaporation of the spray droplets provides cooling to compensate for the effects of hot ambient air temperatures during the summer operating season.

On April 3, 2000, the Environmental Protection Agency (EPA) Region 4 issued a letter to the North Carolina Department of Environment and Natural Resources, Division of Air Quality, regarding the installation of inlet air foggers on simple cycle combustion turbines to increase power output during periods of high ambient temperatures. The letter included a conclusion that the addition of foggers is a modification subject to Prevention of Significant Deterioration (PSD) applicability determination, and stated that the use of foggers allows combustion of additional fuel and, thus, greater power output at the same ambient temperature. EPA guidance regarding the permitting of inlet fogging systems is included as Appendix B.

Additional utilization may also occur after the addition of efficiency enhancements such as inlet fogging. Such increased use would result in increased actual annual emissions even if there is no increase in any emission factors. To ensure that PSD requirements do not apply to the modification of Broadway Avenue Unit 2, the amount of fuel allowed to be used during inlet fogging use has been limited, and stack testing is required to demonstrate that emission rates when the foggers are in use do not exceed the emission rates used in calculating the fuel limits.

Unit 2 is permitted to burn natural gas and distillate oil, although the unit has not used distillate oil for several years. The emissions reported for Unit 2 from May through September (the restricted period for this modification review) for the years of 1999 and 2000 are 27.7 tons and 15.0 tons of  $\text{NO}_x$ , and 0.7 tons and 0.4 tons of  $\text{SO}_2$ . Therefore, the average actual emissions for the restricted period are 21.35 tons of  $\text{NO}_x$  and 0.55 tons of  $\text{SO}_2$ . The addition of 39.5 tons of  $\text{NO}_x$  and 39.5 tons of  $\text{SO}_2$  results in a  $\text{NO}_x$  emission cap of 60.85 tons and an  $\text{SO}_2$  emission cap of 40.05 tons that the facility must remain under during the use of the combustion air inlet fogging system. Exceedance of these additional emission limits will require the modification of the Unit 2 turbine to be subject retroactively to PSD, including BACT requirements. Use of the inlet fogging system will be restricted to the period from the first of May to the end of September each year per the applicant's request.

### Baseline Emissions and Potential to Emit, as Limited, for Unit 2 Modification

	tons/year	
	NO <sub>x</sub>	SO <sub>2</sub>
1999 Actual Emissions	27.7	0.7
2000 Actual Emissions	15.0	0.4
Average Past Actual Emissions (Baseline)	<b>21.35</b>	<b>0.55</b>
PTE of Modification, as Limited	<b>39.5</b>	<b>39.5</b>
Allowable Emissions with Fogging in Use	60.85	40.05

### Actual Emissions

The following table shows the actual emissions from the entire source, including Unit 1 and Unit 2. This information reflects the 1999 OAQ emission data, as adjusted using the April 2000 AP-42 emission factors.

Pollutant	Actual Emissions (tons/year)
PM	2.9
PM-10	2.9
SO <sub>2</sub>	1.5
VOC	0.9
CO	22.0
NO <sub>x</sub>	89.4
HAPs (combined)	0.5

### Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

Process/facility	Limited Potential to Emit (tons/year)						
	Cond.PM	Filter.PM	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
Unit 1	3.66	<b>1.48</b>	0.44	1.63	63.81	<b>249</b>	0.94
Unit 2: natural gas	12.18	12.18	1.04	3.88	55.38	<b>240</b>	2.23
Unit 2: fuel oil	8.91	8.91	<b>225</b>	0.30	56.44	178.22	0.93
Unit 2: fogging (natural gas)	2.01	2.01	28.56	0.64	9.12	<b>39.5</b>	0.37
Unit 2: fogging (distillate oil)	1.56	1.56	<b>39.5</b>	0.05	9.91	31.29	0.16
Maximum Total Emissions	15.84	13.66	225.44	5.51	120.25	489.00	3.17

- (a) The Total Emissions for each pollutant is the sum of the limited PTE for Unit 1 and the worst case limited PTE for Unit 2. **The PTE for the modification (Unit 2: fogging) is included in the overall PTE for Unit 2** to maintain minor PSD status for the original construction of Unit 2. Any increase in allowable emissions for Unit 2 above the originally permitted levels would be a relaxation of the original synthetic minor limits and would require the construction of Unit 2 to go through PSD review retroactively.

- (b) This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.
- (c) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of SO<sub>2</sub>, CO, and NO<sub>x</sub> are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

### County Attainment Status

The source is located in Vanderburgh County.

Pollutant	Status
PM-10	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Vanderburgh County has been designated as attainment or unclassifiable for ozone.

### Federal Rule Applicability

- (a) The addition of an inlet fogging system to Broadway Avenue Unit 2 is not subject to Prevention of Significant Deterioration (PSD) review (326 IAC 2-2; 40 CFR 52.21) due to the fuel usage limits when the fogging system is in use. Additional conditions and revisions to previous conditions in the Title V permit are shown in bold and strikeout in this TSD beginning on page 7, under the heading **Permit Revision**.

The installation of Unit 1 was not subject to PSD review because it was constructed in 1970, before August 7, 1977. The installation of Unit 2 was not subject to PSD review for the following reasons:

- (1) All of the previously existing boilers at the Broadway Avenue Station were permanently removed from service before the Unit 2 turbine commenced operation and both turbines are simple cycle units; therefore, the source was not one of the 28 listed sources;
  - (2) The emissions from the Unit 1 turbine were limited below major source levels (less than 250 tons per year for all criteria pollutants) by the Vanderburgh County particulate matter requirements and previous fuel usage limits; and
  - (3) The addition of Unit 2 was limited as a minor mod (less than 250 tons per year for all criteria pollutants) to a minor source.
- (b) Unit 2 is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60.330), Subpart GG, Stationary Gas Turbines.

- (1) Pursuant to 40 CFR 60, Subpart GG (Stationary Gas Turbines), emissions from Unit 2 shall be limited as follows:

- (A) Nitrogen oxides ( $\text{NO}_x$ ) emissions, as required by 40 CFR 60.332, shall not exceed:

$$\text{STD} = 0.0075 \frac{(14.4)}{Y} + F,$$

where STD = allowable  $\text{NO}_x$  emissions (percent by volume at 15 percent oxygen on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peck load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F =  $\text{NO}_x$  emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of 40 CFR 60.332.

Water injection shall be used to control  $\text{NO}_x$  emissions to the level required by equation stated above. The water injection system shall be operating at the proper injection ratio, as determined by the initial compliance testing, whenever the turbines are in operation except during the 14 minute start-up and 14 minute shutdown periods.

- (B) Sulfur dioxide ( $\text{SO}_2$ ) emissions, as required by 40 CFR 60.333, shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis, or the Permittee shall only use fuel with a sulfur content less than or equal to 0.8 percent by weight;

**(Note:** The pre-construction approvals for Unit 2 require Unit 2 to burn either fuel oil with not more than **0.3%** sulfur content, or natural gas.)

- (2) Pursuant to 40 CFR 60, Subpart GG (Stationary Gas Turbines), a continuous monitoring system for the measurement of fuel consumption and the ratio of water to fuel being fired in the turbine, shall be installed, calibrated, operated, and maintained.
- (3) Pursuant to 40 CFR 60.334(b), the Permittee shall monitor the nitrogen and sulfur content of the fuel being fired in Unit #2. The frequency of determination of these values shall be as follows:
- (A) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.
- (B) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with the monitoring requirements.

The Permittee shall determine the nitrogen and sulfur content of the fuel pursuant to the methods and procedures specified in 40 CFR 60.335. The sulfur content information obtained from this monitoring may be used to document compliance with the limit stated in Conditions D.2.3.

There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to the older turbine, Unit 1, due to the original date of construction. Subpart GG is applicable to gas turbines with a heat input equal to or greater than 10.7 gigajoules (10 MMBtu) which were constructed or modified after October 3, 1977.

- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.
- (d) Neither of the generating units at the Broadway Avenue Generating Station is subject to Title IV requirements (40 CFR Part 72) (Acid Rain Program) because they are both simple cycle combustion turbines that commenced operation before November 15, 1990, and have not added or used auxiliary firing after that date (40 CFR 72.6(b)(1)).

### **State Rule Applicability - Entire Source**

#### **326 IAC 5-1 (Opacity)**

Pursuant to 326 IAC 5-1-2 (Visible Emissions Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), visible emissions shall meet the following, unless otherwise stated in this permit:

- (a) Visible emissions shall not exceed an average of thirty percent (30%) opacity in twenty-four (24) consecutive readings, as determined in 326 IAC 5-1-4.
- (b) Visible emissions shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9) in a six (6) hour period.

### **State Rule Applicability - Individual Facilities**

**Note:** Pursuant to 326 IAC 7-1.1-1 and 7.1.1-2, Unit 1 is subject to 326 IAC 7-1.1-1 because it has a potential to emit twenty-five (25) tons per year or ten (10) pounds per hour of sulfur dioxide. However, there are no applicable SO<sub>2</sub> emission limits under this rule for natural gas fired units. Unit 2 is also subject to the rule; the SO<sub>2</sub> limit specified in the 1980 preconstruction approval is more stringent than the standard limit listed in 326 IAC 7-1.1-2(a).

### **Permit Revision**

Changes to prior permit conditions are shown below in bold and strikeout. New conditions are shown in bold. The name of the issuing office was changed from the Office of Air Management to the Office of Air Quality effective January 1, 2001. Therefore, the name of the office has been changed in the permit modification, and references to OAM have been changed to OAQ. The Table of Contents has been revised.

As stated in Condition B.3 of the original Title V permit, each Title V permit is issued for a fixed term of five (5) years from the effective date; that is, from the original date of issuance, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments to the Title V permit do not affect the expiration date. For clarity, the expiration date has been included on the cover page of the permit modification.

The Title V permit conditions have been modified as follows:

## SECTION A

## SOURCE SUMMARY

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) natural gas-fired turbine, identified as Unit #1, with a heat input capacity of 770 million BTU per hour, and exhausting to stack #1.
- (b) One (1) natural gas-fired turbine, identified as Unit #2, with a heat input capacity of 900 million BTU per hour (**lower heating value (LHV) at 60EF**), utilizing water injection for NO<sub>x</sub> emissions reduction, and exhausting to stack #2. Fuel oils no.1 and no. 2 will be used as alternative fuels. **An inlet fogging system may be used to enhance power production.**

## SECTION D.1

## FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (a) One (1) natural gas-fired turbine, identified as Unit #1, with a heat input capacity of 770 million BTU per hour, and exhausting to stack #1.

**(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)**

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.1.1 Particulate Matter (PM) [326 IAC 6-1-16]

- (a) Pursuant to 326 IAC 6-1-16 (Vanderburgh County Particulate Limitations), the particulate matter emissions from Unit #1 shall not exceed 0.001 grains per dry standard cubic foot (gr/dscf).
- (b) Pursuant to 326 IAC 6-1-16 (Vanderburgh County Particulate Limitations), the particulate matter emissions from Unit #1 shall not exceed 1.74 tons per year. ~~This is equivalent to a natural gas usage of 83.2 million cubic feet (MMCF) per twelve (12) consecutive month period.~~

#### D.1.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

- (a) The Permittee shall use only natural gas as fuel for Unit #1.
- (b) Emissions of nitrogen oxides (NO<sub>x</sub>) from Unit #1 shall not exceed 0.32 lb/MMBtu.
- (c) The input of natural gas to the Unit #1 turbine shall not exceed 1,519 million cubic feet (MMCF) per year.

These limits are required to limit the potential to emit of nitrogen oxides (NO<sub>x</sub>) from Unit 1 to less than 250 tons per 12 consecutive month period. Compliance with these limits makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable to Unit #1 and is necessary to maintain the status of Unit # 2 as originally permitted, as a PSD minor mod to an existing PSD minor source.

## Compliance Determination Requirements

### ~~D.1.2~~ Compliance Schedule [326 IAC 2-7-6(3)]

The Permittee will be considered in compliance with Condition D.1.1 provided that:

- ~~(a) The Permittee only uses natural gas as fuel for Unit #1.~~
- ~~(b) Upon promulgation of a revised SIP limit for Unit #1, the Permittee complies with such requirements for Unit #1.~~
- ~~(c) IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance with a new SIP limit. If testing is required by IDEM, compliance with the PM limit specified in Condition D.1.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.~~

### D.1.3 Testing Requirements [326 IAC 2-7-6(1),(6)]

Within 180 days after issuance of this permit, the Permittee shall perform NO<sub>x</sub> stack testing for Unit 1 to demonstrate compliance with Condition D.1.2(b). Testing will be conducted utilizing methods as approved by the Commissioner, and in accordance with Section C - Performance Testing.

## Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

### ~~D.1.3~~ D.1.4 Record Keeping Requirements

- ~~(a)~~ To document compliance with Condition ~~D.1.1(b)~~ **D.1.2(c)**, the Permittee shall maintain records in accordance with (1) and (2) below. Records shall be taken monthly and shall be sufficient to document compliance with Condition ~~D.1.1(b)~~ **D.1.2(c)**.
  - (1) Calendar dates covered in the compliance determination period;
  - (2) Actual natural gas usage since the last compliance determination period.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

### ~~D.1.4~~ D.1.5 Reporting Requirements

A quarterly summary of the information to document compliance with Condition ~~D.1.1~~ **D.1.2** shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

## SECTION D.2

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]

- (b) One (1) natural gas-fired turbine, identified as Unit #2, with a heat input capacity of 900 million BTU per hour (**lower heating value (LHV) at 60EF**), utilizing water injection for NO<sub>x</sub> emissions reduction, and exhausting to stack #2. Fuel oils no.1 and no. 2 will be used as alternative fuels. **An inlet fogging system may be used to enhance power production.**

**(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)**



## **Emission Limitations and Standards [326 IAC 2-7-5(1)]**

### **D.2.1 PSD Minor Limits [326 IAC 2-2] [40 CFR 52.21]**

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**Pursuant to emission limits established in Installation Permit No. 6078 issued by the Evansville Environmental Protection Agency on May 21, 1980, and a PSD Exemption letter issued by the State of Indiana Air Pollution Control Board on August 29, 1980:**

- (a) The Permittee shall use only natural gas or # 1 or # 2 distillate oil as fuel for Unit #2.
- (b) Emissions of nitrogen oxides ( $\text{NO}_x$ ) from Unit #2 shall not exceed 0.13 lb/MMBtu when firing natural gas.
- (c) Emissions of sulfur dioxide ( $\text{SO}_2$ ) from Unit #2 shall not exceed 0.33 lb/MMBtu when firing distillate oil.
- (d) The input of natural gas to Unit #2 shall ~~use less than 1100~~ not exceed 3605 million cubic feet (MMCF) of natural gas per twelve (12) consecutive month period.
- (e) The input of distillate oil to Unit #2 shall ~~use less than 5380~~ not exceed 10,608 thousand gallons (kgal) of fuel oil per twelve (12) consecutive month period.
- (f) For every gallon of fuel oil that is used, natural gas usage shall be decreased by 252.4 cubic feet.

These limits are required to limit the potential to emit of nitrogen oxides ( $\text{NO}_x$ ) from Unit #2 to not more than 240 tons per 12 consecutive month period, and to limit the potential to emit of sulfur dioxide ( $\text{SO}_2$ ) from Unit #2 to not more than 225 tons per 12 consecutive month period, as required by the 1980 preconstruction approvals. Compliance with ~~this limit~~ these limits makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable to the original installation of Unit 2.

### **D.2.2 Inlet Fogging PSD Minor Limits [326 IAC 2-2] [40 CFR 52.21]**

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- (a) The Unit 2 inlet fogging system shall only be used from the first of May to the end of September each year (i.e., the restricted period).
- (b) Emissions of nitrogen oxides ( $\text{NO}_x$ ) from Unit #2 shall not exceed 0.13 lb/MMBtu when firing natural gas with the inlet fogging system in use.
- (c) Emissions of sulfur dioxide ( $\text{SO}_2$ ) from Unit #2 shall not exceed 0.33 lb/MMBtu when firing distillate oil with the inlet fogging system in use.
- (d) The input of natural gas to Unit 2 shall not exceed 914 million cubic feet (MMCF) per annual restricted period while the inlet fogging system is use. This usage limit and the  $\text{NO}_x$  emission limit in Condition D.2.1(b) limit the total  $\text{NO}_x$  emissions with the fogging system in use to not more than 60.85 tons per restricted period.
- (e) The input of distillate oil to Unit 2 shall not exceed 1888 thousand gallons (kgal) per annual restricted period while the inlet fogging system is use. This usage limit and the  $\text{SO}_2$  emission limit in Condition D.2.1(c) limit the total  $\text{SO}_2$  emissions with the fogging system in use to not more than 40.05 tons per restricted period.
- (f) For every gallon of fuel oil that is used, natural gas usage shall be decreased by 252.4 cubic feet.

**These limits are required to limit the potential to emit of this modification to not more than 39.5 tons of nitrogen oxides (NO<sub>x</sub>) and 39.5 tons sulfur dioxide (SO<sub>2</sub>) per 5 month restricted period. Compliance with these limits makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable to the installation and use of the Unit 2 inlet fogging system.**

**All fuel fired while the inlet fogging system is in use shall be included in the total fuel use for Unit #2 when demonstrating compliance with Condition D.2.1, to maintain the original permitting status of Unit #2, as a PSD minor modification to an existing PSD minor source.**

~~D.2.2~~ **D.2.3**      Particulate Matter (PM) [326 IAC 6-1-2]

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~~D.2.3~~ **D.2.4**      Sulfur Dioxide (SO<sub>2</sub>) [326 IAC 7-1.1-1]

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**Pursuant to Installation Permit No. 6078 issued by the Evansville Environmental Protection Agency on May 21, 1980, the Exemption from PSD Review letter issued by the Indiana Air Pollution Control Board on August 29, 1980, and Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations):**

- (a)      The sulfur dioxide (SO<sub>2</sub>) emissions from Unit #2 shall not exceed ~~five-tenths (0.5)~~ **thirty-three hundredths (0.33)** pound per MMBtu heat input while combusting distillate fuel oil, and
- (b)      **Unit 2 shall burn either # 1 or # 2 fuel oil with not more than 0.3% sulfur content, or natural gas.**

~~D.2.4~~ **D.2.5**      New Source Performance Standard (NSPS) [326 IAC 12] [40 CFR 60, Subpart GG]

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- (b)      Sulfur dioxide (SO<sub>2</sub>) emissions, as required by 40 CFR 60.333, shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis, or the Permittee shall only use fuel with a sulfur content less than or equal to 0.8 percent by weight.

**Compliance Determination Requirements**

~~D.2.5~~ **D.2.6**      Testing Requirements [326 IAC 2-7-6(1),(6)]

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- (a)      **Within sixty (60) days after initial start-up of the fogging system, the Permittee shall perform NO<sub>x</sub> stack tests for Unit #2 while firing natural gas. If the Permittee wishes to use distillate oil as an alternate fuel, the Permittee shall also perform NO<sub>x</sub> stack tests while firing distillate oil. Testing shall be conducted with the inlet fogging system in operation at the maximum water injection rate, and without the inlet fogging system in operation. Testing shall be conducted utilizing methods as approved by the Commissioner; and in accordance with Section C - Performance Testing.**
- (b)      ~~The Permittee is not required to test this facility by this permit. However, IDEM may require~~ **additional** compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the PM, SO<sub>2</sub> and NO<sub>x</sub> limits specified in Conditions **D.2.1, D.2.2, D.2.3 and D.2.4** shall be determined by ~~a~~ **performance tests** conducted in accordance with Section C - Performance Testing.

~~D.2.6~~ **D.2.7**      Sulfur Dioxide Emissions and Sulfur Content

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**The Permittee shall demonstrate that the sulfur dioxide (SO<sub>2</sub>) emissions do not exceed ~~five-tenths (0.5)~~ **thirty-three hundredths (0.33)** pound per MMBtu **when firing distillate oil and that the sulfur content of the oil does not exceed 0.3%**, utilizing one or more of the following options.**

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall document the sulfur content of the fuel oil by:
- (1) Providing vendor analysis of fuel delivered, if accompanied by a certification; **or**
  - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
    - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
    - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or
- (b) Compliance with the SO<sub>2</sub> emission limit may also be determined by conducting a stack test for sulfur dioxide emissions from Unit #2, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, which is conducted with such frequency as to generate the amount of information required by (a) above. [326 IAC 7-2-1(b)].

A determination of noncompliance pursuant to any of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

~~D.2.7~~ **D.2.8** Continuous Monitoring System [326 IAC 12] [40 CFR 60, Subpart GG]

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**Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

~~D.2.8~~ **D.2.9** Visible Emissions Notations

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~~D.2.9~~ **D.2.10** Sulfur Content and Nitrogen Content [326 IAC 12] [40 CFR 60, Subpart GG]

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Pursuant to 40 CFR 60.334(b), the Permittee shall monitor the nitrogen and sulfur content of the fuel being fired in Unit #2. The frequency of determination of these values shall be as follows:

- (a) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.
- (b) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with the monitoring requirements.

The Permittee shall determine the nitrogen and sulfur content of the fuel pursuant to the methods and procedures specified in 40 CFR 60.335. The sulfur content information obtained from this monitoring may be used to document compliance with the limit stated in Conditions ~~D.2.3~~ **D.2.1, D.2.2, and D.2.4.**

**Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

~~D.2.10~~ **D.2.11** Record Keeping Requirements

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- (a) To document compliance with Conditions **D.2.1 and D.2.2**, the Permittee shall maintain records in accordance with (1) and (2) below. Records shall be taken monthly and shall be sufficient to document compliance with Conditions **D.2.1 and D.2.2.**

- (1) Calendar dates covered in the compliance determination period;
  - (2) **The dates and time of operation of the inlet fogging system, and**
  - (3) Actual natural gas and fuel oil usage since the last compliance determination period. **Fuel usage records shall differentiate the quantity of fuel used with the inlet fogging system in operation.**
- (b) To document compliance with Conditions ~~D.2.6~~ **D.2.4 and D.2.7**, the Permittee shall maintain records in accordance with (1) through (6) below.
- (1) Calendar dates covered in the compliance determination period;
  - (2) Actual fuel oil usage since last compliance determination period and equivalent sulfur dioxide emissions;
  - (3) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and
- If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
- (4) Fuel supplier certifications;
  - (5) The name of the fuel supplier; and
  - (6) A statement from the fuel supplier that certifies the sulfur content of the fuel oil.
- (c) To document compliance with Condition ~~D.2.8~~ **D.2.9**, the Permittee shall maintain records of visible emission notations of the Unit #2 stack exhaust.
- (d) To document compliance with Condition ~~D.2.9~~ **D.2.10**, the Permittee shall maintain records of the nitrogen and sulfur content of all fuels combusted in Unit #2.
- ~~(c)~~ (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

~~D.2.9~~ **D.2.12** Reporting Requirements

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- (a) A quarterly summary of the information to document compliance with Condition D.2.1 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting form located at the end of this permit, or its equivalent, within thirty (30) days after the end of the quarter being reported.
- (b) **A summary of the information to document compliance with Condition D.2.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting form located at the end of this permit, or its equivalent, within thirty (30) days after September 30 of each year.**
- ~~(b)~~ (c) The Permittee shall submit a semi-annual summary of the following:
  - (1) For nitrogen oxides:
    - (A) One-hour periods during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with Condition ~~D.2.4(a)~~ **D.2.5(a)**; and

- (B) Any period during which the fuel bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the initial performance test.

The summary shall contain the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under 40 CFR 60.335(a).

- (2) For sulfur dioxides, any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds ~~0.8~~ **0.3** percent by weight.
- (3) For ice fog and emergency fuel as required by 40 CFR 60.334(c)(3) and (4).

The reports in this section shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, in addition to the following address:

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

within thirty (30) days after the end of the six (6) month period being reported.

- (d) To document compliance with Condition ~~D.2.8~~ **D.2.9**, the Permittee shall certify, on the form provided, that natural gas was fired in the ~~boiler~~ **turbine** at all times during the report period. Alternatively, the Permittee shall report the number of days during which an alternate fuel was burned during the report period. The form shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, within thirty (30) days after the end of the quarter being reported.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**PART 70 OPERATING PERMIT  
UNIT 2 NATURAL GAS FIRED BOILER CERTIFICATION**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
**Permit Mod No.: 163-14083-00001**

**This certification shall be included when submitting monitoring, testing reports/results  
or other documents as required by this permit.**

Report period

Beginning: \_\_\_\_\_

Ending: \_\_\_\_\_

Boiler Unit Affected: CT 2

Alternate Fuel

Days burning alternate fuel

From

To


I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title/Position: \_\_\_\_\_

Date: \_\_\_\_\_

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
and  
CITY OF EVANSVILLE  
ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Quarterly Report: Unit 1**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
**Permit Mod No.: 163-14083-00001**  
Facility: Natural Gas Turbine (Unit 1)  
Parameter: ~~Particulate Matter~~ **PSD Limit (NO<sub>x</sub>)**  
Limit: ~~83.2~~ **1519** million cubic feet of natural gas used per 12 consecutive month period

YEAR: \_\_\_\_\_

Month	Natural Gas Usage This Month (MMCF)	Natural Gas Usage Previous 11 Months (MMCF)	Total Natural Gas Usage for 12 Month Period (MMCF)	Usage Limit (MMCF)
				<del>83.2</del> <b>1519</b>
				<del>83.2</del> <b>1519</b>
				<del>83.2</del> <b>1519</b>

**9** No deviation occurred in this quarter.

**9** Deviation/s occurred in this quarter.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Attach a signed certification to complete this report.**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**OFFICE OF AIR Quality**  
**COMPLIANCE DATA SECTION**  
**and**  
**CITY OF EVANSVILLE**  
**ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Quarterly Report: Unit 2 Natural Gas**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
**Permit Mod No.: 163-14083-00001**  
Facility: Natural Gas/Fuel Oil Turbine (Unit 2)  
Parameter: PSD Limit (PM, SO<sub>2</sub>, NO<sub>x</sub>) (**Natural Gas**)  
Limit: ~~4400~~ **3605** million cubic feet of natural gas used per 12 consecutive month period

YEAR: \_\_\_\_\_

Month	Natural Gas Usage This Month (MMCF)	Natural Gas Usage Previous 11 Months (MMCF)	Total Natural Gas Usage for 12 Month Period (MMCF)	Usage Limit (MMCF)
				<del>4400</del> <b>3605*</b>
				<del>4400</del> <b>3605*</b>
				<del>4400</del> <b>3605*</b>

\* For every gallon of fuel oil used, natural gas usage shall be decreased by ~~204~~ **252.4** cubic feet.

- 9** No deviation occurred in this quarter.  
**9** Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Attach a signed certification to complete this report.**



**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**OFFICE OF AIR Quality**  
**COMPLIANCE DATA SECTION**  
**and**  
**CITY OF EVANSVILLE**  
**ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Quarterly Report: Unit 2 Distillate Oil**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
**Permit Mod No.: 163-14083-00001**  
Facility: Natural Gas/Fuel Oil Turbine (Unit #2)  
Parameter: PSD Limit (PM, SO<sub>2</sub>, NO<sub>x</sub>) (**Distillate Oil**)  
Limits: **0.3% sulfur content, by weight**  
**0.33 lb/MMBtu SO<sub>2</sub>**  
~~5380~~ 10,608 thousand gallons (**kgals**) of distillate fuel oil used per 12 consecutive month period

YEAR: \_\_\_\_\_

Month	<del>Natural Gas</del> <b>Distillate Oil</b> Usage This Month (kgals)	<del>Natural Gas</del> <b>Distillate Oil</b> Usage Previous 11 Months (kgals)	Total <del>Natural Gas</del> <b>Distillate Oil</b> Usage for 12 Month Period (kgals)	Usage Limit (kgals)
				<del>5380</del> <b>10,608</b>
				<del>5380</del> <b>10,608</b>
				<del>5380</del> <b>10,608</b>

**9** No deviation occurred in this quarter.

**9** Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Attach a signed certification to complete this report.**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**OFFICE OF AIR Quality**  
**COMPLIANCE DATA SECTION**  
**and**  
**CITY OF EVANSVILLE**  
**ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Seasonal Inlet Fogging Report: Natural Gas**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T 163-6899-00001  
Permit Mod No.: T 163-14083-00001  
Facility: Natural Gas/Fuel Oil Turbine with Inlet Fogging in Use (Unit 2)  
Parameter: PSD Minor Modification Limit (SO<sub>2</sub>, NO<sub>x</sub>) (Natural Gas)  
Limit: 914 million cubic feet of natural gas used per 5 consecutive month period

YEAR: \_\_\_\_\_

Month	May	June	July	August	September	Season Total	Season Limit
Natural Gas Usage This Month (MMCF)							914 MMCF
Equivalent NO <sub>x</sub> Emissions (Tons)							60.85 tons NO <sub>x</sub>

\* For every gallon of fuel oil used, natural gas usage shall be decreased by 252.4 cubic feet.

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Attach a signed certification to complete this report.**

**This form is due within thirty (30) days after September 30.**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**OFFICE OF AIR Quality**  
**COMPLIANCE DATA SECTION**  
**and**  
**CITY OF EVANSVILLE**  
**ENVIRONMENTAL PROTECTION AGENCY**

**Part 70 Seasonal Inlet Fogging Report: Distillate Oil**

Source Name: Southern Indiana Gas and Electric Company  
Source Address: 2600 Broadway Avenue, Evansville, Indiana 47712  
Mailing Address: 20 Northwest Fourth Street, Evansville, Indiana 47741  
Part 70 Permit No.: T163-6899-00001  
Permit Mod No.: 163-14083-00001  
Facility: Natural Gas/Fuel Oil Turbine **with Inlet Fogging in Use** (Unit #2)  
Parameter: PSD Minor Modification Limit (SO<sub>2</sub>, NO<sub>x</sub>) (Distillate Oil)  
Limits: No. 1 or No. 2 fuel oil with not more than 0.3% sulfur content, by weight  
1888 kgals of distillate fuel oil used per 5 consecutive month period

YEAR: \_\_\_\_\_

Month	May	June	July	August	September	Season Total	Season Limit
Distillate Oil Usage This Month (MMCF)							1888 kgals
Equivalent SO <sub>2</sub> Emissions (Tons)							40.05 tons SO <sub>2</sub>

\* For every gallon of fuel oil used, natural gas usage shall be decreased by 252.4 cubic feet.

**9** No deviation occurred in this period.

**9** Deviation/s occurred in this period.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Attach a signed certification to complete this report.**

**This report is due within thirty (30) days after September 30.**

## Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Quality (OAQ) Part 70 Application Form GSD-08.

- (a) This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.
- (b) See attached calculations for detailed air toxic calculations. (Appendix A, pages 1 - 5)

## Additional Comments: Stated Heat Input Capacities

The stated heat input capacities of Units 1 and 2 are 770 million BTU per hour (MMBtu/hr) and 900 MMBtu/hr, respectively. SIGECO requested to have the Unit 2 facility description amended to state that this capacity was based on the Lower Heating Value of natural gas, and to have the emissions calculated at the Higher Heating Value capacity which is 1000 MMBtu/hr for Unit 2 when combusting natural gas and 1087 MMBtu/hr when combusting distillate oil. SIGECO explained that turbine vendors reportedly state the capacity based on the lower heating value, meaning that the latent heat of condensation associated with the moisture in the exhaust gas is ignored. Vendors use this value because at the exhaust temperatures of simple cycle turbines the latent heat cannot be extracted and converted to power.

The supporting documentation for the 1980 permit for Unit 2 includes a page titled "Attachment #1: Southern Indiana Gas & Electric Estimated Emissions Data for Unit 2". The page shows a peak output of 81440 KW and a peak heat rate of 11000 Btu/KWH; LHV. When converted to MMBtu/hr this gives a peak heat input of 896 MMBtu/hr at the Lower Heating Value, approximately the same as the permitted heat input capacity of 900 MMBtu/hr. Therefore, it was determined that the previously stated 900 MMBtu/hr is the capacity at the lower heating value, and the Unit 2 description has been amended as requested.

No corresponding change has been made to the Unit 1 description. For air permitting purposes the heat input capacity at the higher heating value is more commonly used, including the AP-42 emission factors used in calculating the potential emissions and fuel limitations for the turbines at the Broadway Avenue Station. There is no indication in the OAQ files that the originally stated capacity for Unit 1 has previously been considered to be a Lower Heating Value. In a letter dated November 5, 1998, Angila Retherford, an attorney for SIGECO, used the AP-42 PM emission factor current at that time and the stated heat input capacity of 770 MMBtu/hr for Unit 1 in calculating a recommended annual PM emission limit for Unit 1.

The values used for the heat input capacities do not effect the calculation of any of the fuel usage limits established for either unit. The fuel limits were derived using the AP-42 emission factors, in lb/MMBtu, and the heat content of the natural gas (1024 btu/scf) and distillate oil (140 MMBtu/kgal) as reported by SIGECO.

## Conclusion

The operation of the simple cycle turbines identified as Unit 1 and Unit 2 shall be subject to the conditions of the proposed Part 70 Significant Source Modification No. 163-12400-00001. The requirements of the Source Modification will be incorporated in the Title V permit through Significant Permit Modification No. 163-14083-00001.

**Appendix A: Emission Calculations**  
**Natural Gas-Fired Turbine**  
**Unit: BAGS CT No. 1**

TSD App A Page 1 of 5

**Company Name:** SIGECO Broadway Avenue  
**Address City IN Zip:** Evansville, IN 47712  
**Source Mod No.:** 163-12400-00001  
**Reviewer:** Vickie Cordell  
**Date:** May 3, 2001

Heat Input Capacity  
MMBtu/hr

770.0

Sulfur content of fuel (S)  
%

0.0006

**Criteria Pollutant**

Emission Factor in lb/MMBtu*	Condensible PM 0.0047	Filterable PM 0.0019	SO2 0.94(S) (= .094)	NOx 0.3200	VOC 0.0021	CO 0.0820
Potential Emissions in tons/yr	15.85	6.41	1.90	1079.23	7.08	276.55
<b>Emissions as limited, in tons/yr**</b>	3.66	<b>1.48</b>	0.44	<b>249.00</b>	1.63	63.81

Hazardous Air Pollutant (HAP)	Emission Factor* (lbs/MMBtu)	Total Potential Emissions (tons/yr)	Emissions as Limited (tons/yr)**
-------------------------------	---------------------------------	-------------------------------------	----------------------------------

Acetaldehyde	4.000E-05	0.135	0.03
Acrolein	6.400E-06	0.022	0.00
Benzene	1.200E-05	0.040	0.01
1,3 Butadiene	4.300E-07	0.001	0.00
Ethylbenzene	3.200E-05	0.108	0.02
Formaldehyde	7.100E-04	2.395	0.55
PAHs	1.800E-04	0.607	0.14
Propylene Oxide	2.900E-05	0.098	0.02
Toluene	1.300E-04	0.438	0.10
Xylene	6.400E-05	0.216	0.05
<b>TOTAL</b>		<b>4.06</b>	<b>0.94</b>

Napthalene***	1.300E-06	0.004	0.00
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**Methodology**

\* From AP-42, Section 3.1 Tables 3.1-1 (uncontrolled values), and 3.1-2a, and 3.1-3, updated 4/00.

Emission (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hrs/yr x 1 ton/ 2,000 lbs  
PM-10 emission factor is total of condensable and filterable emission factors.

**\*\* Emissions as limited, @ not more than 249 tons/yr of NOx; equivalent to not more than 1519 MMCF/yr of natural gas.**

(249 tons NOx/yr X 2000 lb/ton) / (0.32 lb NOx/MMBtu X 1024 Btu/scf) = 1519.7754 MMCF/yr

Heating value of natural gas is reported to be 1024 Btu/scf. Emission factor conversion: lb/MMBtu X 1024 = lb/MMCF.

Compliance with the NOx fuel limit also shows compliance with the 326 IAC 6-1-16 filterable PM limit of 1.74 tons per year.

\*\*\*Speciated PAH not included in HAPs table to avoid double counting of emissions

Notes: Potential HAPs emissions included for information only.

The AP-42 factors for VOC and some of the HAPs have a "D" rating, which indicates that they are only expected to provide an order-of-magnitude value.

**Appendix A: Emission Calculations**  
**Natural Gas-Fired Turbine**  
**Unit: BAGS CT No. 2**

TSD App A Page 2 of 5

**Company Name:** SIGECO Broadway Avenue  
**Address City IN Zip:** Evansville, IN 47712  
**Source Mod No.:** 163-12400-00001  
**Reviewer:** Vickie Cordell  
**Date:** April 6, 2000

Heat Input Capacity, HHV

MMBtu/hr

1000.0

Sulfur content of fuel (S)

%

0.0006

Criteria Pollutant

	PM-10	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
Emission Factor, lb/MMBtu, uncontrolled	0.0066	0.94(S)	0.32	0.0021	0.0082
Emission Factor, lb/MMBtu, water inject.	0.0066	0.94(S) (= 0.000564)	0.1300	0.0021	0.0300
Potential Emissions, tons/yr, uncontrolled	28.91	2.47	1401.60	9.20	35.92
Potential Emissions, tons/yr, water inject.	28.91	2.47	569.40	9.20	131.40
<b>Emissions as limited, in tons/yr**</b>	12.18	1.04	<b>240.00</b>	3.88	55.38

Hazardous Air Pollutant (HAP)	Emission Factor* (lbs/MMBtu)	Total Potential Emissions (tons/yr)	Emissions as Limited (tons/yr)**
Acetaldehyde	4.000E-05	0.175	0.07
Acrolein	6.400E-06	0.028	0.01
Benzene	1.686E-05	0.074	0.03
1,3 Butadiene	4.300E-07	0.002	0.00
Ethylbenzene	3.200E-05	0.140	0.06
Formaldehyde	7.100E-04	3.110	1.31
PAHs	1.800E-04	0.788	0.33
Propylene Oxide	2.900E-05	0.127	0.05
Toluene	1.300E-04	0.569	0.24
Xylene	6.400E-05	0.280	0.12
<b>TOTAL</b>		<b>5.29</b>	<b>2.23</b>
Napthalene***	1.300E-06	0.006	0.00

**Methodology**

\* From AP-42, Section 3.1 Tables 3.1-1 (water injection values), and 3.1-2a, and 3.1-3, updated 4/00.

Emission (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hrs/yr x 1 ton/ 2,000 lbs  
PM-10 emission factor is total of condensable and filterable emission factors.

**\*\* Emissions as limited, @240 tons/yr of NO<sub>x</sub>; equivalent to not more than 3605 MMCF/yr of natural gas.**

(240 tons NO<sub>x</sub>/yr x 2000 lb/ton) / (0.13 lb NO<sub>x</sub>/MMBtu x 1024 Btu/scf) = 3605.769 MMCF/yr

Heating value of natural gas is reported to be 1024 Btu/scf. Emission factor conversion: lb/MMBtu x 1024 = lb/MMCF.

\*\*\*Speciated PAH not included in HAPs table to avoid double counting of emissions

Notes: Potential HAPs emissions included for information only.

The AP-42 factors for VOC and some of the HAPs have a "D" rating, which indicates that they are only expected to provide an order-of-magnitude value.

**Appendix A: Emission Calculations**  
**No. 2 Distillate Oil-Fired Turbines**  
**Unit: BAGS CT No. 2**

TSD App A Page 3 of 5

**Company Name:** SIGECO Broadway Avenue  
**Address City IN Zip:** Evansville, IN 47712  
**Source Mod No.:** 163-12400-00001  
**Reviewer:** Vickie Cordell  
**Date:** April 9, 2001

Heat Input Capacity, HHV

MMBtu/hr

1087.0

when using No. 2 distillate oil as fuel

Fuel Sulfur Content, S \*\*

%

0.3

	Criteria Pollutant				
	PM-10	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
Emission Factor in lb/MMBtu, uncontrolled *	0.0120	1.01S	0.8800	0.0004	3.3E-03
Emission Factor, lb/MMBtu, with water inject. **			0.2400		0.0760
Emission factor, as allowed by permit **		0.3300			
Potential Emissions in tons/yr, uncontrolled **	57.13	1442.60	4189.73	1.95	15.71
Potential Emissions in tons/yr, with water inj. **			1142.65		361.84
Pot SO <sub>2</sub> Emissions as permitted, in tons/yr **		1571.15			
Potential Emissions as permitted, in tons/yr * using permitted fuel sulfur content	8.91	225.00	178.22	0.30	56.44
Potential Emissions as limited, in tons/yr ** using allowable SO <sub>2</sub> factor from permit	8.18	225.00	163.64	0.28	51.82

Hazardous Air Pollutant (HAP)	Emission Factor (lbs/MMBtu)	Total Potential Emissions (tons/yr)	Limited Potential Emissions (tons/yr)
Arsenic	1.10E-05	0.052	0.008
Benzene	5.50E-05	0.262	0.041
Beryllium	3.10E-07	0.001	0.000
1,3-Butadiene	1.60E-05	0.076	0.012
Cadmium	4.80E-06	0.023	0.004
Chromium	1.10E-05	0.052	0.008
Formaldehyde	2.80E-04	1.333	0.208
Lead	1.40E-05	0.067	0.010
Manganese	7.90E-04	3.761	0.587
Mercury	1.20E-06	0.006	0.001
Nickel	4.60E-06	0.022	0.003
PAH	4.00E-05	0.190	0.030
Selenium	2.50E-05	0.119	0.019
<b>TOTAL</b>		<b>5.97</b>	<b>0.93</b>
Napthalene ***	3.50E-05	0.167	0.026

Methodology

\* From AP-42, Section 3.1 Tables 3.1-1, 3.1-2a, 3.1-3, 3.1-4, and 3.1-5, updated 4/00.

Emissions (tons/yr) = Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hr/yr / 2,000 lb/ton  
PM-10 emission factor is the total of condensable and filterable emission factors.

**\*\* Emissions as limited, @ 225 tons/yr of SO<sub>2</sub>; equivalent to not more than 10608 kgal/yr of distillate oil.**

Installation Permit no. 6078, issued May 21, 1980, limits sulfur content of fuel oil to not more than 0.3 %.

(225 tons SO<sub>2</sub>/yr x 2000 lb/ton) / (1.01 lb/MMBtu x 0.3% Sulfur in fuel oil x 140 MMBtu/kgal) = 10608.204 kgal/yr

Heating value of distillate oil is reported to be 140 MMBtu/kgal.

\*\*\* Speciated PAH not included in HAPs table to avoid double counting of emissions.

Notes: Potential HAPs emissions included for information only.

The AP-42 factors for VOC and some of the HAPs have a "D" rating, which indicates that they are only expected to provide an order-of-magnitude value.

**Appendix A: Emission Calculations**  
**Natural Gas-Fired Turbine**  
**Unit: BAGS CT No. 2 - Inlet Fogging**

TSD App A Page 4 of 5

**Company Name:** SIGECO Broadway Avenue  
**Address City IN Zip:** Evansville, IN 47712  
**Source Mod No.:** 163-12400-00001  
**Reviewer:** Vickie Cordell  
**Date:** April 11, 2001

Heat Input Capacity, HHV  
MMBtu/hr  
1000.0

Sulfur content of fuel (S)  
%  
0.0006

Emission Factor in lb/MMBtu*	Criteria Pollutant				
	PM-10	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
	0.0066	0.94(S) (= .094)	0.1300	0.0021	0.0300
Potential Emissions in tons/yr	28.91	2.47	569.40	9.20	131.40
Limited Emission Increase, tons/season **			<b>39.50</b>		
PTE with fogging, tons/season **	3.09	0.26	<b>60.85</b>	0.98	14.04

Hazardous Air Pollutant (HAP)	Emission Factor* (lbs/MMBtu)	Total Potential Emissions (tons/yr)	Limited fogging PTE, tons/season**
Acetaldehyde	4.000E-05	0.175	0.02
Acrolein	6.400E-06	0.028	0.00
Benzene	2.775E-06	0.012	0.00
1,3 Butadiene	4.300E-07	0.002	0.00
Ethylbenzene	3.200E-05	0.140	0.01
Formaldehyde	7.100E-04	3.110	0.33
PAHs	1.800E-04	0.788	0.08
Propylene Oxide	2.900E-05	0.127	0.01
Toluene	1.300E-04	0.569	0.06
Xylene	6.400E-05	0.280	0.03
<b>TOTAL</b>		<b>5.23</b>	<b>0.56</b>
Napthalene***	1.300E-06	0.006	0.00

### Methodology

\* From AP-42, Section 3.1 Tables 3.1-1 (water injection values), and 3.1-2a, and 3.1-3, updated 4/00.

Emission (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hrs/yr x 1 ton/ 2,000 lbs  
PM-10 emission factor is total of condensable and filterable emission factors.

**\*\* Emissions as limited, @60.85 tons of NO<sub>x</sub>; equivalent to not more than 914 MMCF/season of natural gas used with fogging.**

$$[(\text{past actual } 21.35 \text{ tons NO}_x + 39.5 \text{ tons NO}_x) \times 2000 \text{ lb/ton}] / (0.13 \text{ lb NO}_x/\text{MMBtu} \times 1024 \text{ Btu/scf}) = 914.213 \text{ MMCF/yr}$$
Heating value of natural gas is reported to be 1024 Btu/scf. Emission factor conversion: lb/MMBtu X 1024 = lb/MMCF.

\*\*\*Speciated PAH not included in HAPs table to avoid double counting of emissions

Notes: Potential HAPs emissions included for information only.

The AP-42 factors for VOC and some of the HAPs have a "D" rating, which indicates that they are only expected to provide an order-of-magnitude value.



**Appendix A: Emission Calculations  
No. 2 Distillate Oil-Fired Turbines  
Unit BAGS CT No. 2 - Inlet Fogging**

TSD App A Page 5 of 5

**Company Name:** SIGECO Broadway Avenue  
**Address City IN Zip:** Evansville, IN 47712  
**Source Mod No.:** 163-12400-00001  
**Reviewer:** Vickie Cordell  
**Date:** April 11, 2001

Heat Input Capacity, HHV

MMBtu/hr

1087.0

when using No. 2 distillate oil as fuel

Fuel Sulfur Content, S \*\*

%

0.3

Criteria Pollutant

	PM-10	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
Emission Factor in lb/MMBtu, uncontrolled *	0.0120	1.01S	0.8800	0.0004	3.3E-03
Emission Factor, lb/MMBtu, with water inject. *			0.2400		0.0760
Emission factor, as allowed by permit **		0.3300			
Potential Emissions in tons/yr, uncontrolled *	57.13	1442.60	4189.73	1.95	15.71
Potential Emissions in tons/yr, with water inj. **			1142.65		
Pot SO <sub>2</sub> Emissions as permitted, in tons/yr **		1571.15			
Limited Emission Increase, tons/season **		39.50			
PTE with fogging, tons/season **	1.59	40.05	31.72	0.05	0.44

Hazardous Air Pollutant (HAP)	Emission Factor (lbs/MMBtu)	Total Potential Emissions (tons/yr)*	Limited fogging PTE (tons/yr)**
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Arsenic	1.10E-05	0.052	0.001
Benzene	5.50E-05	0.262	0.007
Beryllium	3.10E-07	0.001	0.000
1,3-Butadiene	1.60E-05	0.076	0.002
Cadmium	4.80E-06	0.023	0.001
Chromium	1.10E-05	0.052	0.001
Formaldehyde	2.80E-04	1.333	0.037
Lead	1.40E-05	0.067	0.002
Manganese	7.90E-04	3.761	0.104
Mercury	1.20E-06	0.006	0.000
Nickel	4.60E-06	0.022	0.001
PAH	4.00E-05	0.190	0.005
Selenium	2.50E-05	0.119	0.003
<b>TOTAL</b>		<b>5.97</b>	<b>0.17</b>

Napthalene***	3.50E-05	0.167	0.005
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Methodology

\* From AP-42, Section 3.1 Tables 3.1-1, 3.1-2a, 3.1-3, 3.1-4, and 3.1-5, updated 4/00.

Emission (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hrs/yr x 1 ton/ 2,000 lbs

PM-10 emission factor is the total of condensable and filterable emission factors.

**\*\* Emissions as limited, @40.05 tons of SO<sub>2</sub>; equivalent to not more than 1888 kgal/season of distillate oil used with fogging.**

Installation Permit no. 6078, issued May 21, 1980, limits sulfur content of fuel oil to not more than 0.3 %.

(past actual 0.55 tons SO<sub>2</sub> + 39.5 tons SO<sub>2</sub> x 2000 lb/ton) / (1.01 lb/MMBtu x 0.3% Sulfur in fuel oil x 140 MMBtu/kgal) = 1888.260 kgal/seaso

Heating value of distillate oil is reported to be 140 MMBtu/kgal.

\*\*\* Speciated PAH not included in HAPs table to avoid double counting of emissions.

Notes: Potential HAPs emissions included for information only.

The AP-42 factors for VOC and some of the HAPs have a "D" rating, which indicates that they are only expected to provide an order-of-magnitude value.